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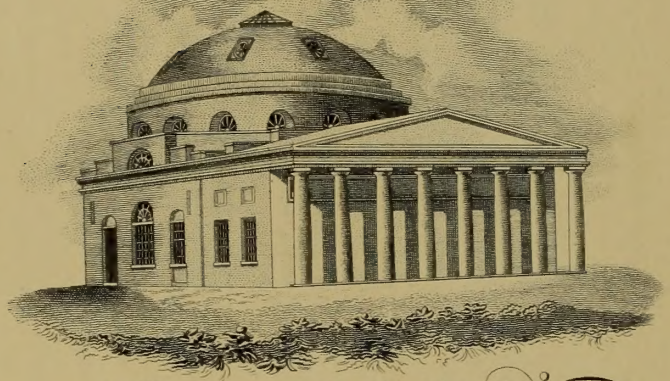

University of Maryland

University of Maryland Theses

Early Doctor of Medicine and Doctor of Public Dissertations with
Corrected Tables of Contents

These manuscripts described as theses in Essays and Dissertations or as Inaugural Essays were presented to the University of Maryland for the Degree of Doctor of Medicine and/or Doctor of Physic during the years 1813-1907. The individual dissertations were bound together during the 1960's. The original tables of contents for the bound volumes contained multiple errors or omitted theses. Also, some years. To address these errors, an additional Corrected Table of Contents has been inserted at the beginning of each volume.

The project team who investigated and corrected the tables of contents were: Richard J. Bobbie, Historical Library, Preservation Officer; Lynn Milgram, Tulsa, Metadata Management Librarian; Angela Gustavson and Mary Darling-Henry, Resources Division; Karen Hawks, Access Services and Megan Wolff, Services Division.

These dissertations were digitized in 2011-2012 and are available in the UM Digital Archive (archive.lib.umd.edu) and through the Internet Archive (www.archive.org).

University of Maryland Theses

Early Doctor of Medicine and Doctor of Physic Dissertations with Corrected Tables of Contents

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The project team who investigated and corrected the tables of contents were Richard J. Behles, Historical Librarian/Preservation Officer; María Milagros Pinkas, Metadata Management Librarian; Angela Cochrane and Carol Harling-Henry, Resources Division; Sarah Hovde, Abra Schnur and Megan Wolff, Services Division.

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(CORRECTED TABLE OF CONTENTS)

UNIVERSITY OF MARYLAND

THESES

1884 (a)

Author	Title	Notes
Wilson, J. C.	Pathology and Therapeutics of Enteric Fever	
Randolph, Robert L.	The Blood	
Barton, W. H.	Diet	(no title page, missing pages)[1]
Wakelee, E. Herman	Methods and Value of Expert Evidence	
Hodgdon, Alex L.	The Relation Which Electro-chemical States Bear to Dynamical Conditions in Organic Bodies	(bound out of order)[2]
Gamble, Robert G.	A Short Account of the Medulla	
Etchison, Elisha H.	Pneumonia	(no title page)
Cronk, Edwin D.	Hemorrhage	
Humrickhouse, George	Diphtheria	(gutter binding)
Hoover, C. S.	Alcoholism	
Jordan, J. R.	Tobacco and Its Effects	

[1] Missing end pages. Final page and final author/title appear in 1884 (d), before Diphtheria (Morris).
[2] Title page on the back of final page.

HSHSL 2012 for the UM Digital Archive. Sources consulted for corrections: Original Dissertation; University of Maryland Medical Faculty, Matriculation List, 1851-1892; Cordell, Eugene F. "University of Maryland, 1807-1907" (New York : The Lewis Publishing Company, 1907), Volume 2.

Author	Title	Notes
Winslow, C. C.	Remittent Fever	
Miller, Edward L.	Typhoid Fever	
Lecato, John T.	Diphtheria	
Duckett, B. Furman	Intermittent Fever	(no title page)

HSHSL 2012 for the UM Digital Archive. Sources consulted for corrections: Original Dissertation; University of Maryland Medical Faculty, Matriculation List, 1851-1892; Cordell, Eugene F. "University of Maryland, 1807-1907" (New York : The Lewis Publishing Company, 1907), Volume 2.

UNIVERSITY OF MARYLAND

THESES

1884 (a)

Wilson, J. C.	Pathology and Therapeutics of Enteric Fever	32p.
Randolph, ~~R.~~ Robert L.	The Blood	25p.
~~Anonymous~~ Barton, W. H.	Diet[1]	12p.
Wakelee, E. ~~H.~~ Herman	Methods and Value of Expert Evidence	20p.
Hodgdon, ~~A.~~ Alex L.	Relation of Electro-chemical States to Dynamical Conditions[2]	16p.
Gamble, ~~R.~~ Robert G.	~~The Medulla~~ A Short account of the medulla[3]	18p.
Etchison, ~~E.~~ Elisha H.	Pneumonia	14p.
Cronk, ~~B. L.~~ Edwin D.	Hemorrhage	23p.
Humrickhouse, ~~Geo.~~ George	Diphtheria	26p.
Hoover, C. S.	Alcoholism	24p.
Jordan, J. R.	Tobacco and Its Effects	54p.
Winslow, C. C.	Remittent Fever	15p,
Miller, ~~Ed.~~ Edward L.	Typhoid Fever	37p.
Lecato, ~~J.~~ John T.	Diphtheria	31p.
Duckett, B. ~~F.~~ Furman	Intermittent Fever	25p.

1 No title page. Missing end pages. Final page and final author/title page appear in 1884(d) "Diphtheria" (Morris).

2 The relation of electro-chemical states to dynamical conditions in organic bodies

3 Possibly missing pages

251

Pathology and Therapeutics
of
Enteric Fever

J. C. Stilson
Big Run Pa

63

IMb
18999

Typhoid Fever is a misnomer for Enteric Fever.

In view of the fact that many of the English writers have adopted the term Enteric Fever as proposed by Prof Geo. H. Ward, many years since, while most of our American authors adhere to the old indefinite term Typhoid Fever, the author of this article has chosen the former term in preference to the latter, believing the force of habit, which we recognize as our own experience, ought not to perpetuate the ancient error. There can be no doubt at the present time that Enteric is the more correct of the two. Enteric Fever, signifying

be designated as a miasmatic contagious disease. A miasmatic disease in the general acceptation of the term implies one in which the emanating effluvia or miasma from decomposing animal or vegetable matter is introduced into the system which undergoes a development within the animal body and generates some form of disease. A contagious disease as commonly understood by the profession is one generated by the infectious contagious miasma from the diseased body in which it was engendered and having undergone further development or at least having maintained its already acquired state of [illegible] introduced into some healthy body sets up a disorder resembling in itself or the disease from which it

[illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible]
[illegible] disease. The diseased [illegible] being thrown
off with the various excretions of the pa-
tient undergoes a subsequent development
[illegible] of the living body under favora-
ble atmospheric conditions and is introduce-
d into the system through some one
[illegible] of transmission where it sets up
a disease identical in its nature, causes,
and symptoms to the parent from which
it originally [illegible] [illegible] [illegible]
into the system its development is
attended with all those kaleidoscopic or re-
[illegible] phenomena and changes cha-
[illegible] of a [illegible]. It is not [illegible]
[illegible] the [illegible] of this essay [illegible] [illegible] their [illegible]
[illegible] the author is satisfactorily [illegible]

[illegible] the nature [illegible] of the [illegible]
[illegible] is the change brought in the blood
and other tissues during the progress
and action of a specific disease. Different
hypotheses advanced by [illegible]-pathologists
with a view to explain how they are due
to a [illegible] molecular action within
the blood or the mode of action may be
[illegible] to that [illegible] [illegible]
as unfolding some of our [illegible]
Physiology and Pathology of [illegible],
the particle matter [illegible] the [illegible]
[illegible] and [illegible] in the blood [illegible]
[illegible] of its particles [illegible]
its whole mass. The overflow of the blood
[illegible] the lymph and thus the deteriorated [illegible] fluids are brought into
contact with every elemental unit of the

[illegible] organisms. [illegible]
[illegible] fever [illegible] [illegible] to a [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible]

body of animals is kept up by the [illegible] of the oxygen in the blood in the lungs of the air drawn into the lungs." Chemically speaking this is true but it does not account for the change and proper statement upon the production of heat. In attempting to trace of heat from the results of experiments in Physiology we are irresistably led to the conclusion that a process of [illegible] is specially associated with the [illegible] of heat so powerfully in the [illegible] and that Berzelius felt satisfied in saying, "Colorific and Vitrifiée process is complete analogy to great chemical and electrical." In speaking of the great store days he accentuated that by [illegible] of the [illegible] perpetually [illegible]

[illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible]

in the ear. The results of these and numerous other experiments led Bernard to propose the hypothesis of a dilatator fibre in the cervical sympathetic and a dilatator nerve in the chorda tympani.

On referring to the experiments of Pflüger the details of which would be tedious to enter upon here, he concluded that it has been established that a thermotactic mechanism does exist and the importance of vasomotor mechanisms in explaining not only the maintenance of the normal temperature but the abnormal variations of temperature in disease can hardly be exaggerated. His particular suggestion is that there are vasomotor nerves which so regulate the amount of temperature in health and that fever is not alone due to increased [illegible]

because I suppose we think it is, it should be fully due to a paralysis or inhibition of the pneumogastric. We will briefly review the relative frequency of heat generated by different tissues of the body and its effect on muscular tissue and then refer to the pathology of the cutaneous lesions in Cutaneous Cancer. Whenever protoplasmic of protoplasm is wasting we heat is being set free. Our muscles and our nerves, in the transformation of the products of digestion into living tissue, and the whole cycle of changes from the lifeless substance through the living tissue back to the lifeless waste products of vital action, is constantly a source of heat, and all the tissues of the body the muscular system burning up it has so large a share of the heat in the body and also from the ac-

[illegible] character of the [illegible] pain
in perineal muscular tissue is the chief sense
of heat relative to the quantity produced
up to the muscular tissue in the glandular
organs. In these tissues the heat
produced later metabolic activity is
mainly caused in which must necessarily
give rise to high temperature efficiency
since shows that the blood of the detritic pain
is greater the permanent of the [illegible] by showing
that the increased temperature is not due
to ill for removal from the purpose but
must undoubtedly be caused by the glandular
activity of the organ [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible]
whole body we may conclude that since the
[illegible] is [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] heat is everywhere being

[illegible], the peripheral nerves of different parts of the body are not alike affected at any or uniform elevation of temperature. The pressure appears to be first to paralyze the vasodilator effect and quite considerable rise of temperature may be attained which is of itself lethal. Under the influence of cold the action of the pressure fibres seems uncertain, irregular, and feeble. The vasomotor do not exercise its influence first on small and on larger vessels, till about in the periphery. Experiments show this by confining them in close chambers with gradually increasing heat temperature until it becomes very intense. It appears that the pressure appears used to constriction first and both nerves equally. Experiments showed that the sensation of the

[illegible] elements were neglected and [illegible] or [illegible] of [illegible] [illegible] [illegible], especially caused [illegible] death [illegible] from intense [illegible]. Hence an especially high temperature or the long continuance of an increase of an elevated temperature in [illegible] typhoid fever is a good [illegible] of [illegible] failure.

The most important local changes in Enteric Fever is the intestinal lesion. The intensity of the systemic poisoning seems to be an [illegible] [illegible] within the [illegible] [illegible]. Marked changes occur distinctive of this [illegible] of disease. On the crest of the [illegible] [illegible] inflammation of the intestines is the [illegible] of Peyer's patches, [illegible] hyperaemia and [illegible] infiltration of both [illegible] and [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

[illegible] is [illegible] swelling
and congestion which causes them to rise
above the surface of the bowel and take
on a prominent dark reddish spots. Under
this inflammatory and infiltrative pro-
cess is softening, ulceration and sloughing
which extends to the muscular coat and
even through it. The shape of the ulcer corresponds
to that of the involved glands and ulceration may
be so extensive by coalescence of numerous indi-
vidual ulcers that the lower part of the colon
is a mass of slough in the neighborhood
the ileo cecal valve. When healing of the
slough has occurred and resolution of the tissue
within lining of the ulcer occurs the proliferation
of cicatricial tissue elements. Granulations shoring up from the bottom and the
ulcer is closed by fibrous [illegible]

lic of all mucoid tissue (Virchow). Ulceration.

A bed of granulating tissue is said to be formed underneath as regards the healing of ulcers. (Bartholow-says) "The floor of the ulcer is soon covered by granulations and is gradual and in a healthy place the ulcer is ultimately closed, a cicatrix marks its site" (Prac. of Med. 62) Colwell says "healing is accomplished without any destructive ulceration or exfoliation of the part" (Practice page 40) The hyperaemia and exudation which marked the onset of the intestinal ulceration also to a greater or less extent upheld the dysentery. The hyperaemia is thus in every case accompanied swollen and inflamed followed by softening and absorption of the products of inflammation and restoration of the enlarged glands to their normal size and

First Edition.

The spleen is subject to similar changes in this disease.

Therapeutics.

Within the last decade during which time the different - societies in Pathology and their Therapeutical indications have been subjected to a close investigation of advanced medical science and the great and good revolutions which they have undergone Fever - with its nature and relations has not been neglected. In fact the modern medical literature on the subject of fever indicates that no other disease has been more thoroughly subjected to the boiling crucible of experimental therapeutics. Grand and successful as many of these great changes have been the therapeutics of fever is yet imperfect - and uncertain. But Materia Medica not only as an

[illegible] that at a [illegible] a rational science is rapidly on the advance and the day appears nearer in the future when the treatment of febrile diseases will be reduced to a successfully rational empyricism.

To sustain a glance at the condition in which the therapeutics of fever existed some twenty years ago and with some authority even at a more recent date than this one is tempted to wonder that [illegible] [illegible] the primitive [illegible] [illegible] [illegible] of fever. Investigation has proven that the physician has now at his command antipyretics [illegible] with which he can almost abort the course of a continued fever or at least maintain it within limits that in itself is not immediately dangerous to life. — In commencing the

treatment of enteric fever if the bowels are confined a mild laxative may be given. Great caution is necessary in moving the bowels as a mild aperient is liable to set [illegible] severity. In this as well as in other forms of fever the quantity of secretions is increased both as to [illegible] in their solid constituents, diminished as regards water and [illegible] skin dry and hot. Secretion of the urinary elements is [illegible], the liver and [illegible] glands [illegible]. In fact the secretions of the body which are naturally [illegible] are [illegible] excretion and in aid in overcoming the [illegible] small doses of calomel [illegible] [illegible] with [illegible] [illegible] [illegible] may be given

[illegible] particulars of the exercise, and these conditions, on the results of the practice of the application of heat-spots, which I think main object to be accomplished by treatment is the reduction of the heat, and also the pulse which follows a practical fact the general of all physicians concerned the body. To effect this object I recommend have for some past administered bromide of potash, also wet packed cold by employing "Dr. Taylor's pulse and relaxing the chain" it being well known to physicians that the condition of the nervous and brain was highly beneficial in producing febrile excitement. Antimony Ipecac and other depressants and sedatives were the medicines most frequently used, but since the adoption of wet

[illegible] definitely immaterial [illegible]
[illegible] accompanied [illegible] a [illegible]
[illegible] health [illegible] which [illegible]
[illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible]

excess of bodily temperature. Of all medicinal agents used for the reduction of bodily temperature by diminishing the production of heat, Quinine probably leads the list. It acts in reducing temperature by its effect on the migrating activity of the leucocytes and by lessening the absorption of oxygen from the red blood corpuscles thereby decreasing oxidation. But its diminished oxidation of tissue is evidenced by the fact that it diminishes the amount of urea in health and in disease. Our authority states that a couple of Quinine lessened the amount of urea excreted by half and there being an extraordinary increase in the amount of urea excreted in the urine is absolutely lessened. It has the power of arresting the amoeboid move-

[illegible] The presence of oxygen renders the white corpuscles "active" and the carbonic acid [illegible] if in the active state in the protoplasm. Undifferentiated living matter is the lowest form of animal matter and wherever evolution of protoplasm is going on heat is being set free. The quantity of leucocytes in the blood together with the lymph is estimated to form one fourth of the entire weight of the body. The lymph fluid comes in most intimate contact with every tissue of the body and bearing as it does its nutrient of leucocytes impregnated with [illegible] bacteria and bacilli [illegible] the leucocytes act as a most potent factor in the production of heat for the increased [illegible] of [illegible] night sweats [illegible]

"[illegible] and [illegible] which [illegible] must be attended with [illegible] and if [illegible] will [illegible] these [illegible] high authorities [illegible] it will by deprivation of oxygen or otherwise, it will prevent the [illegible] of heat. Quinine is eliminated almost entirely by the kidneys and bowels. In [illegible] fever [illegible] required for effect the administration which must be consumed in the blood." Different opinions are entertained by authorities as to its mode and quantity of administration. Those writers who advocate that it should never be given in doses larger than that of 15 grs. [illegible] that larger doses [illegible] this have a marked deleterious effect on the heart inducing failure of that organ. Quinine [illegible]

phases of large doses of bromide are rapid
the means of little more reports one case
in which this remedy appeared to have an
injurious effect on the nervous system.
Numerous instances are on record in which,
and cases of epilepsy have been cured or
materially lessened of their frequency
by this remedy: therefore after trying
it in the beginning of the disease, it should
be tried in larger and cumulative doses are
required from 20 to 40 grs. A decline of several
strokes and lasting a number of days will be
caused by a sufficient dose, and a less dose
from this will not be in the embarrassment
of the remedy" (Pro. of Med. Feb. 1872-3) "Bromide as
an anti-epileptic should be given from adult
doses of from 20 to 40 grains. If it proves
effective it must be repeated daily, or every

[illegible] Dec. 1st, 1875, [illegible]
[illegible] is [illegible] the [illegible] of [illegible]
the [illegible] [illegible] [illegible] [illegible] [illegible]
degree of [illegible] [illegible] in which [illegible]
[illegible] [illegible] [illegible] no longer effectual. (Pemberton
Physiologia, p. 261). [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible]
[illegible] [

The tail red although not so conspicuous as [illegible] resides in the [illegible] hypothesis. And the electric [illegible] of [illegible] is about [illegible] in [illegible] [illegible], [illegible] [illegible] under the [illegible] but its [illegible] is [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] with [illegible] [illegible] [illegible] [illegible] with [illegible] [illegible] [illegible] [illegible] it is not likely to be [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

[illegible] the precautions to be taken at least temporarily, of the chest to the surface, where it is subjected to the varying influence of the atmosphere. The most important — nay, indispensable — is the use of the cold pack in fever. Here, it is [illegible] beneficial. Great weariness, the blue veins and coldness of the surface with rigid [illegible] hard pulse. The more pleasant is the [illegible] perhaps in physician is frequent observation with warm bath water. Cooling baths and [illegible] [illegible] [illegible]

[illegible] action of it is a natural one
[illegible] of the heart while [illegible] the Doctrine
class it as a heart tonic. It increases
the power of the systole and prolongs the diastole. It slows and at the same time strengthens the cardiac pulsations. Still [illegible] the theory that it increases the vigor of the heart by its stimulating effect on the spinal cord [illegible] (which [illegible] the demonstrated [illegible] as the most inhibitory nerve of the heart) thereby slowing the heart and that while [illegible] in the frequency of the beats is made up in force; it also improves the nourishment of the heart muscle itself by increasing the quantity of blood circulating through the nutrient arteries. These arteries are filled during diastole of the heart and increasing the vigor of the systole a greater quan

[illegible] of blood is [illegible] in [illegible] may
be drawn by virtue of its contracting power
upon its contents. With greater force blood
would be vigorously distributed a greater
quantity of blood must necessarily be passed
into the coronary arteries thereby increasing
the nutrition of the heart walls by increas-
ing its blood supply. An apparent contra-
diction of his own statement is made by
the last named Author in regard to the use
of digitalis in this disease. In his treatise
on Mat. Med. page 300 he considers its use
as an antipyretic in this form of fever
while in his work on Practice of Med. page
702 it is strongly recommended as best
the treatment of this disease. Digitalis acts
upon the peripheral blood vessels and causes
them to contract lessening the amount of

blood circulation to the exclusion of the body. This peripheral constriction results in an increased amount of labor on the heart in endeavoring to propel the blood through the system and if the heart be weakened by a continued fever or any form of degeneration this condition of the circulation should certainly not be induced and it appears to the writer that its administration in the later stages of enteric fever would be a continued menace to life. — If at any stage of the disease there be symptoms of heart failure stimulants and alcoholic stimulants must be freely but judiciously administered.

So much space and time could be saved if we consider all probable antipyretics and other remedies that have been

and in the treatment of this disease, since they are based over six weeks.

The dietetic management of the disease alimentation is of the most importance. It should be nutritious and assimilated by the stomach and bowels and should consist of nourishing liquids mainly. Milk contains all the proximate principles essential to life as food and digestible by the sick, is comparatively easy of digestion and as a rule agreeable to the stomach. It may be given "through" or in the form of mixtures Milk punch &c &c frequently and in liberal quantities. In the advanced stages of the fever in addition, and in place of alcoholic stimulants Whiskey or Brandy may be added and carefully administered

[illegible] the [illegible] [illegible] [illegible] [illegible]
Beef Tea is an excellent article of diet.
Nutrition should be kept up from the very
outset of the disease always remembering that
a fever cannot be starved out of a patient and
that alcoholics should not be stinted until
the vital forces are prostrated and then depend more
on artificial stimuli to bridge over a critical
period.
The closest attention should be given to the room
of the patient — it should be kept well ventilated
by clean air and sunlight freely admitted
and the excretions at once disinfected and re-
moved. A number of lectures contended that
the prevalence of Enteric Fever might be con-
fined to a single case by giving attention
to the excretions while under particular condi-
tions if this be neglected it would mean

the [illegible] of an epidemic. As a preventative then [illegible] the patient [illegible] or [illegible] it should be immediately disinfected with a strong solution of Sulphate of Zinc or Chloride of Zinc and to obviate all further risk or danger of propagation the dejections should be buried underground. The clothing of the patient and bed when removed should be immersed in boiling water containing Chloride of Zinc.

J. C. Wilson,
Big Run,
Jefferson Co.,
Penna.

[illegible]

[illegible] a

[illegible] natural [illegible]

which those [illegible]

heads. It is a torrent [illegible]

[illegible] through [illegible]

[illegible] [illegible] [illegible]

[illegible] [illegible] [illegible]

which in the course of the plan

[illegible] of the various streams

[illegible] [illegible] [illegible] [illegible]

[illegible] [illegible] [illegible]

Sometimes such a mass of
the tissues not less than five
thousands pounds weight of
breath. If such a moment of
our time there is made the
pounds of this blood passing
in our continuous breathing
stream from the heart through
the great arteries and branches
and branch like a tree, the
vessels becoming smaller and
smaller, till they disappear, till
they are invisible to the naked
eye. Then they are called
Capillaries = hair-like vessels
No more to be considered in
Calibre but still carrying blood

are left behind. Then vessels
form & return, some from
the direct lacunæ, others, indeed
that if we have the tube
of almost just heart with
the point of a needle we can
see all them and let out to
behind. As the vessels fill
blood yields some of its nutritive
materials and seems in a large
part of the tissues, producing
a lymph. The modified blood
stream continues to flow
some backward to the heart
through a system of veins
which commence in the minute
capillaries that have been

[illegible]

The veins instead of [illegible]
[illegible] the arteries, become
[illegible] [illegible] [illegible]
[illegible] Twigs returning
branches [illegible] the branches
trunks, till they reach the
heart. [illegible] [illegible]
blood [illegible] [illegible] into the heart
from the veins [illegible]
through the lungs, [illegible]
[illegible] back again to the heart
[illegible] arteries, thus completing
the circle [illegible].
Although to the naked eye
blood appears as a homogeneous
fluid, having a scarlet color.

The microscope comes in that
it is a glass carrying [illegible]
[illegible] of definite characters
[illegible] — it shows, indeed,
[illegible] more than, so much
[illegible], [illegible] The astonished eye
betrays whether it be the blood
of a man, a bird, a reptile
or a fish. When both the
the microscope is [illegible]
[illegible] of kilos of half-
dollars. It is these floating
solids of the blood upon which
now your attention must be
fixed. They are called, Blood-
corpuscles, Blood-cells &c.
The first person who saw the

Leeuwenhoek was a man
named Swammerdam in 1658,
but his observations unfortunately
for him were never found out
till the bacteria in general had, to
credit of the discovery went to
Malpighi in Italy in 1661.
The structure of these bodies is
different at study. Some said that
these had no bodies under 20 miles,
but were the observations many
decades ago, but now it is
an easily proven fact that
that they number on average
spot or million. They are
very numerous and in one
number 5000000 to a cubic

[illegible]-meter. The [illegible]
corporation [illegible] it is said that
[illegible] than
[illegible] they [illegible]
[illegible]. The [illegible]
of two [illegible] lines, [illegible]
having no [illegible] to [illegible]
[illegible] the [illegible]
[illegible]. The [illegible]
of [illegible] the [illegible], [illegible]
[illegible] and [illegible]
[illegible] is [illegible]
[illegible] of the
[illegible]

[illegible]

[illegible] is this substance which has such a remarkable affinity for oxygen & which is [illegible] the principles of respiration. These red corpuscles are said to be produced most actively in the spleen and have been seen in the red marrow of bones. It is then red corpuscles that give the red appearance to blood. Besides these there are also [illegible] in the blood known as the colourless or white corpuscles. These are much larger than the red & present the appearance

[illegible] found besides [illegible] a
[illegible] of [illegible] granite
imbedded in a [illegible]
[illegible]

[illegible]

[illegible]

of that [illegible]
[illegible]
[illegible] of the [illegible]
These [illegible] indeed [illegible]
[illegible] the same [illegible]
[illegible] the [illegible] of [illegible]
[illegible] [illegible] with that
[illegible]. [illegible] [illegible]
[illegible] through the [illegible]
[illegible] [illegible] of the [illegible]
[illegible] had [illegible] their [illegible] of

cemetery matter, are frequently spoken of as the
Carbuncles. The chief manufactories of these white corpuscles are the spleen, lymphatics, adenoid tissue and also the red marrow of bones.
Let us now turn from the floating solids of the blood to the [illegible] fluid, the liquid portion of the blood. As the blood circulates in the vessels we see that there is nothing solid in it but the corpuscles; yet no sooner have it escaped from the vessels, the

part of the liquid fuel is converted into a trembling jelly, from which a yellow fluid slowly separates. The yellow lobe moves as many of the red-coloured globules as it can, and is called the clot, the yellow fluid is called the serum, which forms in each of the vessels. The yellow globules are called the white corpuscles, but we cannot see them, because they are colourless. But we know they are there, as the blood becomes red when it comes in contact with the air, which is the same as the blood that has been exposed to the air.

and then, for most part Mal-
pighi has washed the clot
free from all the red corpus-
cles — leaving that the white cor-
puscles which then remained
were of a dirty brown
colour. He came to the conclu-
sion that the substance was
figured in the blood and that
it consisted chemically
when it, blood was drawn
from the veins in the world
the coagulation of blood was
noticed the serum, or of it
was drawn and blood.
Hence Mal. pighi has
stated the substance of

blood coagulates and has that is occasioned by the interaction of the substance fibrinogen & plastin and fibrin ferment. The question may arise, why does the blood coagulate in the vessels [illegible] it does not clotted out of them. The answer to this is that there is a certain relation existing between the vessels and the contained blood, and so long as this relation is preserved the blood remains fluid but when the relation is disturbed as by an inflammatory condition of

the coats of the vessels coagulated with them, giving rise to [illegible] known as a thrombus.

The fibrin solution of blood or serum is really the nutritive part of the blood containing all the albumen and other salts in contradistinction to the corpuscles and containing albumen and only the salts. Hence albumen also exists largely in the serum.

The corpuscles contain the clotting [illegible] fibrin. Starting from the time they left vessels in trying

in different individuals, from 1.4 to 3.3 in 1000. The blood-cells vary with the various health. The estimates fluctuate from 60 to 71 parts in 1000, the variation being greater during diges-tion. Such are the chief ingre-dients contained respecting the blood in general, but most non-attention to the different kinds of blood in different parts of the circulation. For although we speak of "the blood" as if it were always one and the same thing, it is in fact a system of various fluids a confluence of streams, each more or less

[illegible] from the other. The first-grand division is familiar to all men — namely that of moral and intellectual, the former being [illegible] the latter higher or more spiritual. This distinction is the origin of the [illegible] between the inferior [illegible] of the animal [illegible] of man, [illegible] of the [illegible] of the human [illegible] of the [illegible] of the human [illegible] [illegible] the [illegible] [illegible] [illegible]

[illegible] the difference in
the different relative amounts
of oxygen and carbonic acid they
contain for animal blood
containing the greatest amount
of oxygen, hence it follows
that [illegible] does not
[illegible] from the atmosphere.
[illegible] the [illegible]
from the lungs.
[illegible]
tissues is nearly, but not the
carbonic is [illegible] of its oxygen, and so it flows
from the tissues it is [illegible]
and will burn [illegible]
in its passage through the

[illegible]

[illegible] an exchange takes place, no oxygen will be liberated. The carbonic acid is [illegible] at the outset [illegible] at the tissues and [illegible] is taken up by the blood in exchange [illegible] oxygen.

Such is the wonderful [illegible]

[illegible] blood and such its [illegible]
to be a [illegible] [illegible]
[illegible] [illegible]. [illegible]
[illegible] survey, it will be [illegible]
[illegible] [illegible] [illegible]
[illegible] [illegible] [illegible]

[illegible]

[illegible] [illegible]
is not [illegible] understood.
[illegible] [illegible] [illegible] [illegible] the
tissues are nourished by the
blood. But in what does it
this consist? Blood is [illegible]
[illegible] influence of nourishing
the tissues [illegible] [illegible]
[illegible] it [illegible] [illegible] [illegible]
the system [illegible] a vessel, it [illegible]
does nutrition and acts like a

foreign substance. Secondly, [illegible]
ser it rejoices [illegible]
them, shut up in a system
of closed vessels; but as it moves
along these vessels contain of
its elements escape through the
delicate walls of the vessels and
furnish a plasma from which
the tissues are elaborated. The
Exchanges certain products of
waste are taken up by the
blood, and carried to the organs
of excretion. The organs may
render the process memorable.
The body is like a city inter-
sected by a vast network of
canals such as Venice; the

canals are laden with barges which carry to each house the meat, vegetables & groceries needed for daily use. and while the stuff is thus transported at each door the canal receives all the sewage of the houses. The house will take one kind of meat, and another house another kind, while a third will let the meat alone and take only vegetables. But as the original stock of food was limited, it is clear that the [illegible] of each house necessarily affects the welfare of the others. This is what occurs in —

Nutrition; the muscles demand
an act of principles, the nerves
a record, the lungs a tribute, and
each pile stand from the blood
stream which it needs assuming
the status for which it has a
need of power.
Does not this throw a new
light upon the blood? Can we
not see now that blood is
an organic structure, existing,
changing, strengthening, changes which
are the conditions of its development
and activity. The food
and drink, which we take, have
prepared to a complicated series
of digestive processes. The liquid

product of digestion is carried
into the blood. Stream contain-
ing many minute changes in its
parts. It is now blood, but
after changes unknown, when
this blood is taken to the
nourishment of the tissues,
and the certain elements
form it, through the medium of
the lymphatics, the blood
assimilated by the tissues.
In the complete animals, the
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]

[illegible]

[illegible]

[illegible]

X J. X.

[illegible]

[illegible] matter [illegible]

[illegible] essenc[illegible]
[illegible] absorpti[illegible]
[illegible] ici[illegible]
[illegible] air into a
[illegible] closed tubes that
[illegible]

Before this absorption can take place, they must be dissolved by the aid of muscular and nervous; and they then must be a condition of the substance approved into a like nature with blood.

They must ever be a due regard to the condition and supply of the absorbing organs as the of the most effectual means of promoting health as well as curing disease. The digestive tract of the person depends altogether upon it being set the same above tape as the respiratory apparatus and other parts of being healthy. There has been longer, but perhaps been hindering to the free, healthy to be healthy, yet only [illegible] [illegible] [illegible]

From [illegible] we learn that [illegible]

[illegible]

[illegible]

[

Again this fearful malady is
[illegible] one of those affections
"living to eat" instead of "eating to
live" and, if we observe the course
of these and mental feelings of
those under artificial appetite we
see to rich cordials and spirits
to produce an exhilaration so
rapid to lift the stomach to the
office of digestion, we would
proclaim the truth of the old
adage "Wine cupidity gives
gladness". It has been observed by
a physician in one of the hospitals
in England that if
poor he had a [illegible] to
exercise whenever an opportunity
of obtaining them occurs. He
states that in distributing drinks
to the most needy they will
more often [illegible] that
would be most likely to the
habit in preference to those
likely to really need service to
the system. That the [illegible]
or abuse of liquor has given
a zest for his favorite [illegible]
rather than left his stomach

earlier and even snatches the
medicine tha
of an attendant. L
titution recover itself and

[illegible] the [illegible] of all
of diseases which stand before
his appetites, and it [illegible]
[illegible] be [illegible] and [illegible]
is only a repetition of the
[illegible] story. The [illegible]
[illegible] to be to
thoroughly cured, or we have
gotten well, and [illegible]
therefore a long enjoyment of
this happy condition.
A healthy man at [illegible]
allowance for the [illegible]
there only to satisfy the
hunger, that is he will [illegible]
gratify his wants [illegible]
in order not to have to eat
again [illegible] the
[illegible] overloading on the part
of the digestive [illegible]
and [illegible] of repletion, [illegible]
[illegible] to [illegible] the [illegible] of his
[illegible] "[illegible]".

There has been a great amount
of discussion as to the proper
food, as derived from the
[illegible] kingdom of nature, the

[illegible] not

vegetables and animal food appear ought to partake of. Man's teeth or perhaps a proportion with that of herbivorous animal and the cut, good and a carnivorous the other, will always be found to be suited to the assimilation of both vegetable and flesh. A good table, we see, show that his diet ought to consist of both kinds of food equal, judging from the shape of the different kinds of teeth should be in the relation of twelve to twenty in favor of the vegetables. But in deciding this point there are many things to be considered, such as: habits, age, climate, exercise &c.

There is no absolute rule as to the proportions of the two can be given, still, only taking into consideration what is disagreeable, we may be sure that we have conformed at the wants of the animal as compared with the vegetable diet.

At first thought it would be imagined that the poisonous kind of tobacco, being similar to the poisons our flesh and force requiring little more than division and refining would have far less effect in injuring the degree of excitement and heat that attends the digestion of a meal than the latter, which has to undergo a very complicated course of decomposition and recomposition before being assimilated to the body. But the reverse is the case.

Regarding the one in preference to the other there must be a due regard to the amount of bodily exertion and therefore what the individual undergoes, nothing that the animal doth enter coming in contact with the nerves exerts an immediate stimulating effect upon them, causing more rapid action and for a time of that

of all the animal kingdom a large proportion of their food which is essentially nutritive. Also persons of sedentary habits by the use of animal diet from the excess of nutriment thus supplied may at length suffer bodily disease. While this is shown to be true in the case of old persons and inactive adults, the age from 14 years is the young component in the development of the body.

It is a curious fact that nature seems to supply the aliment of almost every animal in the first stage of life. Even the granivorous birds get for several days after being hatched, nourished by the yolk of the egg.

It would not do for us living in a climate such as this to employ an animal diet exclusively. For this diet alone is too highly stimulant. It

life be fed with disease necessarily follows.

Of course the above is not meant to deny that the exclusive use of fruit for a time, when the system needs just such stimulation, is quite as advantageous, if perhaps applied as any powerful remedies are.

The exclusive use of vegetable food, on the other hand, cannot produce sufficient nourishment and energy to maintain the functions and activity for which humanity are formed, yet the vegetable diet is injurious to an insect or other life that an animal diet, if only is to be used to the partial (if not wholly to be complete) exclusion of the other.

The physiology of the fruit age would be held many discussions and offering opinions on the subject of what are ought or bought not to be used for the preservation of health

or the cure of disease.

At this day, however, the discovery of chemical agents, of which the Thomsonians could not formerly boast, has induced physicians to depend rather upon these remedies for the cure of disease, than upon a modified flora, as described above.

What we take daily for food must not be, at least, less important as what we take also, and only be given as a cure.

Artificial associations in many instances have so wrought upon our abilities, that they are far from expressing the true wants of our system.

It is said that man has no natural food, but that by the aid of his brain he is to render such the gifts nature provides, suitable for his sustenance by the art of cultivation. Our sic, indeed, has been brought to their present degree of excellence by

the art of agriculture. For instance take the potato which was originally a small and bitter root growing in Chile and elsewhere and see how it has been raised to such a condition as to form almost the only food of thousands of people at this day. But it is not our purpose to trace the history of and analyze the substances of the Materia Medica at present.

Experience has been and must ever be the Great Teacher.

It is experience and often dearly bought experience that teaches the old nurse that certain mixtures produce injurious compounds after reaching the stomach, even though the chemist may have failed to explain the nature of such formations.

Let the human being with his powers of reasoning, by an application of the principles of Physiology and Chemistry

Methods and Value
of
Expert Evidence.

A Thesis.

By

E. H. Wakelee.

Ergo te rogo, ne spere vendere Deum;

sicut malitiae genti hominum commodum, est.

The Evidence of Medical Experts in cases of the criminal inquisitorial; with some remarks upon its method and value.

The rapidly increasing number of homicides in this country, the prevalence of crime, and the frequent calls upon physicians to testify for or against the accused parties in trials involving the questions of mental crime and insanity, must give a deep interest to the medical student, and make it a matter of serious and practical importance to the practitioner of medicine who is required to give evidence in a court of law.

Upon the testimony of a skilled medical expert, not only the life

or liberty of these persons charged with crime often hangs, but the fair and good report of most distinguished families frequently depend.

It is not singular, therefore, that, in an issue of such vital importance, the inquiry should arise in the mind of the public, but should also present itself to the curiosity of the medical student — how reliable is expert evidence in cases of alleged lunacy when honestly and intelligently given, and is it customary for such experts to engage their services for good round fees to either side in a criminal trial without knowing the merits of the case, and regardless of the injustice their testimony may inflict upon the unfortunate and possibly innocent victim?

It is claimed that it is not uncommon for both prosecution and defense to engage their expert witnesses long in advance of the trial in court, such witnesses having never seen the accused whose sanity is questioned, and knowing absolutely nothing of his mental condition.

It is also usual that after such employment these witnesses prepare themselves with special reference to writing their respective courts and attorneys upon the trial of the cause in court, and that the sharpest cross-examination fails to elicit anything in favor of the opposing party.

Such testimony may be learned and able, a lingo of terms and a skillful handling of definitions may lose for great weight with an

unexpressed jury. — But surely, no means sane or otherwise, should be considered or acquitted on evidence prepared and shaped by previous contract — nor is it possible such testimony will subserve the ends of justice, or redound to the credit of the profession whose members offer it.

Should it be said that this is an improbable and untrue assumption as to the manner in which such evidence is sometimes obtained, I think it will not be difficult to point out instances where the expert witnesses have promptly anticipated and agreed to furnish the desired proof upon the "Ex parte" and biased statements of their employers.*

* Our esteemed lecturer on Chemistry said to us when he had demonstrated to us Marsh's beautiful test for arsenic poisoning, "for all this test is so conclusive, it is easy for the expert

In the ordinary course of such trials the experts employed to convict rarely see the accused party until they meet him in the court room. Upon hypothetical, unfair, and imperfect statements they have decided and pronounced in advance, to prove that the alleged criminal is not insane, and the evidence of a dozen other equally intelligent experts who are well acquainted with him, to the contrary, has no effect upon their preconceived opinion unless it be to strengthen their faith in their own preconceived judgment.

chemist, in a court of law to so confuse or encourage jury by creating shades of doubt upon the fact that they think it comparatively worthless." What I conceive to be true in case of de lunatico inquirendo might be true in cases where there is a fair chance for truth and justice to conquer.

With the same facility the friends of the "prisoner" are able to procure overwhelming testimony that he is as "mad as a March hare" and as guiltless of voluntary crime as a disembodied saint.

To the student of medicine the little respect shown by opposing experts for each other's opinions uttered upon their oaths, would seem enough to stagger the confidence of an intelligent and thoughtful juror in the trustworthiness of any of them. If we turn from this aspect of the subject, and regard the medical witness as an impartial examiner of the culprit's condition, instead of a hired helper of the attorneys, we are still confronted by methods that impair our confidence in the soundness of his declarations.

Whatever may be our theory as to

the pathology of insanity, and however firm our belief that it is essentially and entirely a physical malady it must be acknowledged, it seems to me, that an intelligent and reliable opinion as to any given case can only be formed by an accurate and complete knowledge of the manner, habits, acts and entire deportment of the patient, rather than by recourse to the ordinary diagnostic means such as an examination of the tongue pulse &c. &c. usually employed in detecting diseases that are attended by only physical derangement.

If we admit as most claimed, I believe you claim that the mind of a lunatic is as hard and sound as that of a philosopher, nor the disturbance occasioned by bodily or

material ailment? that the mind is like a colour and perfect light shining through one clouds medium or if as others assert there is no mind at all except the force or product of nervous action, by what known physical condition or set of physical symptoms is the expert alienist to declare an individual insane? — Are such experts able to point out or describe certain physical conditions, or a pathological state that unfailingly, or with such a reasonable probability indicates incipient or established lunacy? — It may be said certain physical signs and indications are always present in certain forms of insanity (which it seems to me cannot be a valid assertion.) But will the most learned and experienced alienist

assert that like pathological symptoms are not frequently manifest in persons who are only in convalescence?—

A well known Doctor of Divinity in the State of Indiana who is at the head of a large asylum for the insane, in a widely circulated article, declares, "that if a single case of insanity can be shown to come on as the result of well recognized bodily disease, the mental disturbance disappears pari-passu with the physical deterioration" the proposition that insanity is a physical disorder is fully established.

The same man might also say that if a single case of Rheumatism can be shown to depend upon too much or too little acid in the human system, therefore too much or too little acid is the cause of all the

pain and aches which this disease has inflicted upon the human race.

Doubtless there are scores of patients in the institution over which the distinguished gentleman presides who can write as flowerlike as they regularly in the year, and if some time out of ten the same "well recognized" disease did not fail to occasion insanity or any of its symptoms, the force of his argument would be more apparent.

In any event the relations of the physical and mental forces seem to be at present too obscure and debatable to render this mode of reasoning conclusive. If it were possible to show that some lesion or disease of the brain or any other part of the human organism may be and often is the pathologic cause of insanity, and that

there are certain physical signs indicating the presence of such lesion or disorder, then possibly the medical Examiner and witness might arrive at a correct opinion as to the sanity and moral responsibility of his patient as readily as he would diagnose and determine the real condition of things in a case of pneumonia. But it is admitted even by those who hold that all insanity is attributable to physical derangement that there is no congruity or proportionate relation existing between the physical lesion, symptoms and the mental phenomena. It often happens that great mental disturbance is associated with slight or imperceptible physical injury, and vice versa.

If this be true neither the

temperature of the patient, nor the condition of his pulse, nor the appearance of his eye, or tongue, nor the state of his skin, nor the character of the secretions nor excretions can in the present state of medical science, be accepted either separately or combined as conclusive evidence of his insanity.

In many obstinate cases of lunacy there is very slight variations from a normal standard in any of these organic or functional cases I conclude that only by the aid of long and careful observation of or by an absolutely correct description of the patients habits, manners, appearance and mental characteristics can even a competent observer determine in many instances so important and obscure a matter.

That there have been great strides of progressive medical science during the past generation is, I think, recognized by the intelligent portion of community as well as by the profession; but whether the condition of the view reaches up to the high level of a science and the second class of humanity or descends to the pursuit of "money making" and the mechanical performance of the practical duties of a business; must have much to do with the future character and success of the profession. It is the present custom in cases of alleged lunacy to call as expert witnesses men who have charge of lunatics or lunatic asylums to sustain the views and claims of the attorneys employed by the prosecution and defense.

many of these experts are men who by good luck or family influence have been suddenly and unexpectedly elevated to their position as superintendents of private or public institutions, and have only the blind guide of their own experience on which to rely. They are not faithful students nor profound thinkers, but only by virtue of their promotion and election, they at once claim to be professional experts whose services are in frequent demand, and whose opinions the law compels the court to receive as knowledge and truth. That they, without a compass and depending solely upon their individual observation should now or then fall, when they come to meet with the problem of an abstract science and the sharp fire of a

cross examination is not singular, and that they should unintentionally fail to subserve the ends of justice and the credit of their profession is not more strange. An frequent visitor of our courts in cases of de lunatico inquirendo can have failed to observe the confused and contradictory testimony given by some of the most eminent and realy able members of the profession, while it sometimes happens that the most acute and intelligent spectators are constrained to believe that some of the contradictory evidence is opposed with the fair and p[illegible]ness that often characterizes the quarrels and brawls in a justice's court, instead of being inspired by the high and just sentiments that should actuate the members of a

of a noble and proud profession.

As a remedy for some of the defects now complained to exist in training might it not be well to give more thought and attention to the study of Psychology and Philosophy as an aid and preparation for a fuller and broader understanding and comprehension of a most essential branch of medical jurisprudence?

Respecting much the opinions of physicians may differ as to how often one of alleged insanity it must be conceded that they will be to a considerable extent modified by the moral and mental conditions; and while I would not dispute the advantage to be derived from the combined observations of the various types of insanity as they are

advanced in the appointment of an
Assistant Surgeon, it will seem proper
and necessary, especially if they are
to appear as the principal expert
witnesses in courts, that they should be
something more than the keepers and
attendants of those placed under their
charge. In order to the schools of
Europe physiology constitutes one of
the separate branches of professional
study, and it seems to be important
that some attention should be paid
by the medical student to this branch
of science both in his preliminary
and regular course. To a certain
extent his studies should be philosophical as well as of the purely medical
science that are in physiology in
learning the normal conditions and
healthy functions of the human body,

So in the study of insanity he may learn the healthy operations of the mind. It also seems probable that a more satisfactory and equitable solution of these difficult questions might be obtained in a majority of the cases of supposed or alleged insanity if the matter was submitted to a commission of competent inquirers.

Such a commission should be composed of men distinguished for their medical attainments, not only, but who are also possessed of the highest character, of sound common sense. This commission if put on practical shape is sure not to be influenced by a pecuniary nature, and during the discharge of its duties should act as a permanent board.

The decision of such a tribunal as to the responsibility of confessed homicide would, in my opinion, be much more acceptable to the parties interested in the case, and more satisfactory to the court and jury than are the contradictory and conflicting, and often sometimes purchased opinions of the so called medical experts, many of whose income received for their pettifogging testimony given in the courts exceed the sum of their salaries as managers of public institutions.

To provide the best methods for carrying out the suggestions for an education in the cause of study, and the establishment of the commission herein recommended would be a task beyond my ability

a person, and the purpose of this paper to indicate.

If I succeed in directing more attention to this important subject or I go out into the world a small part of my life work will have been accomplished.

Finis.

E. H. Parker.

Sept. 20, 1882. Medical Student.

Observations on Electro Chemical Stress, tending to prove a Conduction in organic bodies or Electricity Considered as the Cause of the Phenomena of Life.

The fundamental Laws of Science are only more or less Generalized Facts, and what should be called Science, as the Science of Chemistry, can be Given as Science, only by the Effect Heat and Light produced by Chemical Action, and with the Effects of Electricity Determined by the Electrometer. It is probable that the Cause of Life is Electro-Chemical Conduction as Exhibited by Dissection. An Objection has been raised against the Death of the Electrical Agency.

"That CO_2 therefore is an electro-positive element, may be inferred from a consideration of the strongest affinities exerted by its oxide. For instance $NH_4OH + CO_2 = NH_4HCO_3 + H_2O$ In NH_4OH we have it would seem, an oxide having the metallic radical NH_4 replacing H. The NH_4 (ammonium) is obtained from the HCl compound from a metal; in other words, the action of proper electrical conditions serves with the Cl as follows: $NH_4 + Cl = NH_4Cl$ (chloride of ammonium) CO_2 in obtaining the following: $NH_4OH + CO_2 = NH_4HCO_3 + H_2O$. In other words, we see that the H has a stronger electrical affinity for the Cl and that for the CO_2 than through the intervening rule and

combine with the N atoms by
without a course — but that it
being thrown into the nascent
state, two of its molecules having
been satisfied by satisfying the
two molecules of H — the other
three atoms finding that they
could then electrostatically
after attaching themselves
to those of the N which with the N
by throwing out the curious
electro-negative N into the
electro positive state and after
having accomplished this curious
exploit — leaving N, the latest
theories seeming admit of the
power possessed by a weak electro
positive or negative element of
being thrown into the opposite
state by a strong one having like

Electrolytes - but it is
could not be rather to say
that all electrical conductors
are the same, only varying in
their adjustment for friction in
accordance with the conditions which
they are placed under (induced
formerly through agency
especially their chemical, rather than
mechanical compounds) Electrolytes may
we account for such wide differences
as earth, inorganic compounds, Eg.
Alkalies, acids of turpentine,
fruit, honey etc. All of which
have the formula $C_{10}H_{16}$, and
besides these we have other differences
to account for in instances where
the electricity has been connected
with chemical combination, ought
to be considered as having valid

ground, from the results of many experiments performed with the battery E.g. take the analysis and synthesis of H_2O by means of the electric shock. We find that the brain substance is composed largely of CH, and fats containing Phosphorus, and we know that these are highly oxidizable - and oxidizable - we have also (according to our hypothesis) capable of generating an amount of electrical force in direct ratio to the amount of oxygen brought to them. We are also aware of the fact that Phosphorus acid* is produced during active mental labor - due to the presence of the phosphorus; and in this way we have a surplus of phosphates eliminated after a considerable

(5)

intellectual work of the constituents of the brain during health

Second. The fundamental
characteristics or constituents
certain cells, which may assume
under favorable circumstances, upon
life or affinity, be forced into a
tendency or other — or, that the
effect of cultivation, may
have acquired by the continued
exercise of the same thoughts (or
their equivalents such as the forms
in reflex actions) or magnetic influence
which would change the same in-
fused agency into other
modes of brain cycle — more readily
responded to than is the same
impression (making a tendency
in the same thought or action
that brought about the magnetic
relation) rather than to other
impressions which would have the

from different mathematics
into a repetition of Tyndall's
fascinating & inimitable
quotations from Lombard's
interminable work on the Physiology
of Mind. "We are content to
believe that without question
we can no more think with the
brain than we can hear with the
ear." We know that if
oxidation does not take place in
the brain — the individual who
is so unfortunate as to be the
occur-rebelt during the time
that the oxygen is withheld is
a condition which we would designate
as insanity. The reason is
plausible. The action of phosphorus
and C_2H_5HO are probably identical
to a certain extent in causing

or Doctor, he feels the pain in the
brain secretary or duct. In this way
he traces the original evolution
of thought. If a disorder in any
part of the body that an impression
is carried over a sensory nerve to
the ganglion matter and registered
(as it were) and another current
(as shown in one current say)
hardened and sent back over an
efferent nerve to muscle or else
this way we have coordination
of movements. Now if there is
waste a small quantity of stimulus
which has an increased blood
supply sent to the center and
coordination of movements
facilitated individual evolved
more rapidly - brain made
manifest thoughts higher

action of the centres controlling the tongue; (or in other words fashioned into conformities of language) in connection with the centres controlling the expiration of breath. You all of this can easily understand the result is increased oxidation of nerve tissue - consequently (with electrical fluid theory) increased manifestation of electrical action - producing the exhilarated phenomena of exaltation and complete control over the faculties. But in tracing the course of this so-called laughter on after the application of a greater amount of stimuli - you will notice finally from over stimulation (just before direct sedation occurs) an incoordinate

of innumerable small molecules
(what?) that it seems
that they would have cannot
necessarily (as there is some
coordination can be there is some
oxidation - and can equate the
imaginary electrical betw.)
that the latter state should
be due to diminished oxidation
and diminished electrical
action. According to Influence
impressions may take place
in the brain without the
presence of consciousness. (for
note that before death -
reflecting some stimuli which
had been imprinted upon
their brains - but which they
were not conscious of at the
time. Transmolecules (through

habit you might say) render it easy to assume certain ideas or other relations as ascertained. They may be regarded as such relations have been capable of being put to that purpose which their nature has made manifest as such for use. It is evident that the characteristics of the same act (both the elements or forms of the act, the manner of proceeding (if ostensible) in the social and business department order (as it were) to organize the same impressions which other made, or the bearing about the same transmission or circumstances the same definite results as the act of speaking of a,

thus would the soul be conveyed to be a species of consciousness on the part of the spinal cord - but it is probable that from a blood the molecules of matter in its entire magnetic relation, so that they become so thoroughly charged that it were easier for them to throw themselves into the same relation again upon like stimulation as they did before, and for the same form of impression to produce the same results. The brain of the child is being constantly a portion of these atoms (you might say) naturally are charged with the same pattern as that of its progenitors - sometimes the nerve currents take to lead it in the footsteps of its mother, or

offspring the mental powers and characteristics are brought by some distant ancestor, and made manifest; but it is fortunate or unfortunate that children are - capable of both the parents again as they are apt to be unduly developed in the offspring, and consequently have a weaker brain production in this way. Children evidently have certain instinctive properties in their brains and bodies which must have been handed down from generation to generation - as a child will mouth its food when they are allowed to roam over the floor - as in the act of crawling - even if it be too young to crawl. Muscle absorbs oxygen and carbon

and yet, but leaving it
through the question for it
(for the order given in Mr. Lord Kent)
is the respiration of the tissues
(or account of tissues respi-
ration) analogous change occurs
every tissue of the body. Rigor
mortis may be removed for a time
by the injection into the
arteries of oxygenated blood.
Electrical currents have been
demonstrated as existing in the
body by the means of the
galvanometer. But in conclusion
how could we account for the
rapid transmission of impressions
from the periphery to the centre
and back again with such rapidity
unless it be by an electrical
hypothesis? and if we accept the

theory of homogeneous current as known by the chemical action made manifest in the muscular tissue through the oxidation of the same by electrical action, and is nearly warm-blooded then consider the body as an immense industrial laboratory in which the inorganic material is (as it were) by a synthetical action altered into matter of a higher organic nature; and the original elements down and changed from a material of great complexity to one of a less complex nature. Looking at it in this light and adopting the suggestion, that all chemical action is made manifest through the opposite electrical

Consequently the elements-that so developed it, would first at that electrical moment will be considered as constituting the vital phenomena.

A thesis bearing on,

The relation which

Electro-Chemical states bear to dynamical

Conditions in organic bodies; or

Electricity considered as constituting

the phenomena of life.

Univ. of Maryland By,

Author's account of the Medalla

University of Maryland

Feb-18-1884.

A. C. Gratten Jenkins

F.R.A.

Little originality remains for the student of medicine owing the numerous Journals &c. In the following I do not claim any production of my own; but only a few points on the Anatomy & Physiology of the Fourth Ventricle & the Medulla Oblongata.

For the Anatomy I have made use of Dr. John Stage Davis' notes on Human Anatomy & of Dalton's Human Physiology for the Physiological part.

I shall first take up the Medulla Oblongata, then a few points on the Fourth Ven-

ticle - then I shall and with a few remarks on the Physiology of

Extending from the foramen magnum (upper border of the atlas) to the posterior lower border of the Pons Varolii the medula oblongata is found, thus establishing connection between the spinal marrow and the brain. It is conical in shape, the large end above and forward. It is about 1¼ inches in length. Passing down its centre in front is the Anterior median fissure and similarly marking its centre posteriorly is the posterior median

chee, though not accurately bisecting it seem to indicate its division into lateral symetrical halves. Each half is subdivided into four portions by three longitudinal grooves lying beside the anterior median fissure and separated by it, from its fellow, is the portion called the Corpus Pyrimidale. Just behind this slightly bulging and separated by a fissure, is the 2nd portion, the Corpus Olivare - being visable for about 1/2 inch only. Behind this last is a third portion, the Corpus Restiform and by another slight

groove from the forth portion, the posterior Pyramid, which lies behind the Corpus Restiform - and beside the posterior median fissure by which it is separated from its fellow. The two posterior pyramids are small but as they are followed up they suddenly dilate into a bulbous enlargement and again as suddenly decreasing, they separate as they ascend the one from the other and leave the angular interval called the Callamus Scriptorius (writer's pen). When the Medulla-Oblongata reaches the pons Varolii it seems on superficial view to stop short; but

if the surface-fibres of the Pons, wich are transverse in direction, be peeled off, it is seen that the Pons consists, in the centre, of vertical or longitudinal fibres, which are continuous with the fibres of the Medulla Oblongata below, and being gathered into two bands emerge from the anterior border of the Pons as the Crura Cerebri. Thus having given a gross description of the anatomy of the Medulla, I shall in brief give a few points of the Fourth Ventricle.

The Fourth Ventricle is situated beneath the Cerebellum or between it and the posterior aspect of the Medulla Oblongata. It is lozenge shaped (triangular in vertical section) and its boundaries are as follows - its floor is the Calamus Scriptorius of the Medulla Oblongata; its roof is formed by two elements, the lower posterior part is the Cerebellum, the front part is a thin membrane like layer called the valve of the brain, valve of Vieussens; each side is formed by a thick cord

passing from the Cerebellum to the Testes and called "Processus e Cerebello ad Testes."

The ventricle is closed behind and below by a fold of Pia-Mater, as it passes from the Medulla to the Cerebellum.

On the floor of the ventricle are seen two rounded oblong ridges called "striæ Tectes" crossing these as they are passing from the posterior median fissure outward are the fibres of the origin of the Eight nerve (Auditory). These fibres being white and running transversely are

called Lineae transversae.
On that portion of the roof formed by the Cerebellum are four projections one in front on the median line called the Nodulus. One just behind this called the Uvula and one on each side of the Uvula called the Tonsil (amygdala.
Communicating with the front upper extremity of the ventricle is the Aqueduct of Sylvius which passes upwards beneath the Corpora Quadrigemina, to the back part of the Third Ventricle.

The Fourth Ventricle was called by the Older Anatomists, the first since it is more easily reached and more constant in its existance in the different natural orders. The gray matter of the Medulla recedes in a backward manner. The Post: horns of the cord spread out in a lateral manner & the ~~gray~~ remainder occupy the part between. Thus the gray substance lies on the posterior uncovered part of the Medulla just beneath the roof of the Fourth Ventricle. It then extends forward towards the Aqueduct of Sylvius & on its course

gives origin to all the Cranial nerves except the Olfactory & Optic.
The connections of the Medulla are viz - Connected with the Cerebellum by the Corpora restiformia, which goes under the name of Processus ad medullam oblongatam. To the Cerebrum by the two Crura Cerebri which forms the longitudinal fibres of the Pons Varolii & emerge from its anterior border to reach the Cerebrum -
Thus having completed, as briefly as possible, the gross anatomy of the Medulla, we will now turn to the Physiology - Getting our datta from Dalton's Human Physiology

No part of the brain has so marked Physiological properties as the Medulla. Its Posterior part being both sensitive and excitable. As it is the connecting link between the brain & the Spinal Column any lesion of it will cause loss of sensibility & voluntary motion in the lower extremity.

The reflex action of the Medulla is very distinct in its character. Its connection with the Respiratory functions is one of marked characteristic points. So long as the medulla is not injured life may continue without the aid of the remaining

portion of the brain — but death will take place instantaneously on its being injured. This is caused by the effect produced on the Respiration & Circulation. The circulation is stopped because the blood is not sufficiently aerated — & is thus a secondary result. The Respiration is stopped because the Respiratory Centre is interfered with.

As respiration is performed by the actions of different muscles, and as these muscles are furnished with nerves that have origin at diff. points — so the injury of these different nerves

or their points of origin will have different effect according to the part injured. Thus the respiratory muscles are arrested in their action by section of the cord about the 3rd cervical vertebra. Still inspiration is kept up by the glottis & in some animals by the nostrils whose nervous influence comes from another quarter. That is from a certain point in the Medulla. Hence we see that section of the cord at the third cervical vertebra will cause paralysis of the respiratory muscles of the chest without interfering with

the action of the glottis or nostril.

Flourens has conveyed near the exact centre of respiration — the main transverse [illegible] of the Medulla. I found that just behind the origin of the pneumogastric nerve was the [illegible] of respiration. By injuring this point all respiratory movements were [illegible] at once. This point is about [illegible] of the transverse [illegible] of the lower [illegible] or [illegible] part of the [illegible] —

The movements of respiration

[illegible] produced by nervous stimulus derived from the respiratory centre of the medulla [illegible] not consciousness of its going on, but is by any voluntary effort we should arrest it — unnatural stimulus [illegible] action [illegible] the & more it is important that we should remove the obstacle to respiration [illegible]

This action of the medulla is Reflex — The oxygen of the blood is consumed in the tissues & the carbonic acid gas accumulates in the blood — this blood now supplying the medulla

causes can not be set up which in turn causes respiration must be brought into play — Thus we have two forms of it — retaining Reflex — The sudden application of any external stimulus induces a reflex act — we call it a voluntary respiratory movement — Secondly — stoppage of the pneumogastric nerve causes diminution of the respiratory movements — Hence we may suppose that it would off white stimulus to the respiratory centre is derived from excitings through the pneumogastric nerve.

Deglutition is also governed by the medulla - Food put on the back of the tongue - is swallowed under the control of our wills but by its presence acts on the nerves & they in turn transmit the stimulus to the medulla & by Reflex action the muscles of the pharynx & gullet are thrown into action. -

The medulla is also concerned with Phonation which is carried on by Reflex action.

Thus we see that the medulla is the seat of such reflex actions as are necessary for life as the movements of

respiration & deglutition
is governed by it - It also has
control of those muscles by
which phonation is accomplished
thus enabling man to communicate
his thoughts to the spoken word.
The independent centres of the
medulla are.

1° Respiratory
2° Vaso motor centre
3° Diabetic
4° Cardio-inhibitory
5° Influencing it - Secretion of saliva
6° " " " " pancreatic
7° Phonation
8° Articulation
9. Deglutition
10° Centre for Vomiting -

Pneumonia

Syn. — Pneumonitis. — Peri-pneumonia. — Pulmonitis.

Pneumonia is an inflamitory condition of the parenchyma or substance of the organs of respiration. —

Varieties. — This disease is for the sake of convenience and also for the mutual benefit of both practitioner and patient divided into three forms: Viz., lobular, single and double. Lobular, when isolated lobules are affected, more or less in number in both lungs: Single, when one entire lung is diseased: double when both organs

are in a state of hyperae-
-mia.

Causation.— It may be idio-
-pathic, traumatic or tur-
-berculous. It is considered
idiopathic when this dis-
-ease is produced by the vicis-
itudes of the weather; trau-
matic, when the affected or-
gans have been subjected
to some mechanical violence;
tuberculous when it is con-
comitant of phthisis. This
disease is still further divided
into acute, chronic and infan-
-tile, I propose to deal here
with the acute form.

Symptoms.— The first stage
is that of congestion or en-
gorgement, and the commence-

-ment of exudation.

Generally after exposure, this disease is ushered in by a chill, accompanied by rigors, which are specially followed by a pain in the thorax. This pain is generally acute, though sometimes obtuse and occasionally it is entirely wanting. We generally have moderate dullness, of resonance on percussion over the affected lung and on auscultation, after the first day or two, the fine crepitant rale. The pulse is often accelerated and full, however it is in accordance with the extent of the local mischief. The cough and dyspnoea

are very annoying and exists the disease. The cough always aggravates the pain. Dyspnoea and expectoration are both difficult and painful for the first three days, when, if the disease passes into resolution, the above named processes are ameliorated. The temperature of the body is increased above the normal heat. If a lung is examined in the congestive stage of pneumonia its color is deep red and the pressure of fingers ~~ex~~ leaves an indentation upon its surface and the crepitation is not as great as in health.

The specific gravity is somewhat impaired, but it still floats in water.

When the inertexture of the affected portion of the lung is severed in the stage of congestion, a bloody, frothy turbid serum copiously exudes. If the disease is not timely arrested it passes into the second stage, or stage of red softening or exudation and red hepatization.

Second Stage.— This stage is characterized by a deep red, or reddish brown, decided dullness on percussion, no rale, but instead, bronchial respiration and bronchophony, with increased

vocal fremitus.

When the lung is cut into, it bears a striking resemblance to liver; and on this account is said to be hepatized. Should the lung be pressed between the fingers at this time it would exude a redish fluid, which is thicker, less frothy, and in less amount than that observed under similar circumstances in the congestive stage.

The lung not collapse upon exposure to the atmosphere, as in the healthy state.

Third Stage. — In this stage there are two conditions, one of which, and infinitely

the most common, is that which we term gray hepatization or gray softening, and the other is abscess. In the former the lung is compact and dense as in the red hepatization, but, instead of the dark red color, presents within and externally a yellowish opaque, purulent fluid, sometimes tinged with blood. A very slight violence in handling, occasionally produces a cavity in its substance which gradually fills with pus, and may be easily mistaken an abscess.

The second condition above alluded to is exceedingly rare in adults.

Complications. — The only affections with which pneumonia is likely to be complicated with, are capillary bronchitis, pleurisy, and phthisis.

Terminations. — Death scarcely ever occurs in the first stage of pneumonia in uncomplicated cases; but occasionally takes place in the second stage from asphyxia.

If our patient be vigorous enough not to be overcome by the disease until it reaches the third stage, he or she, which ever it may be, then dies from exhaustion.

Diagnosis. — The diseases with which pneumonia is liable to be confounded, are

bronchitis, pleurisy, and occasionally phthisis. From bronchitis this disease is diagnosed by the advantage of auscultation and percussion by the practice of which we detect dulness, rale, bronchophony and bronchial respiration. It is discriminated from pleurisy by the crepitant rale, rusty sputa and absence of the sharp pleuritic pain. Phthisis is very insidious in its progress and is not accompanied by the characteristic crepitation and sputa.

Prognosis.— The prognosis of double pneumonia is unfavorable at all periods of life, though recoveries

quite often occur in this variety. Acute infantile pneumonia or pneumonia of one lung in a vigorous, healthy individual with skillful treatment and proper nursing, if all other circumstances are auspicious, recovery may be expected.

Treatment. — The treatment of each stage in pneumonia furnishes different therapeutical indications, and each stage is to be considered separately. The question whether the disease may be arrested, relates to this stage. Measures which are considered as abortive are bloodletting, cathartics, and

other remedies entering into the so called antiphlogistic method of treatment.

As regards bloodletting I think it admissible in certain cases as a palliative and to some extent, a curative measure. The circumstances which permit its employment are high febrile movement, increased power of the heart's action, patient somewhat plethoric and of a robust constitution, In cases however in which bloodletting would be admissible provided the same ends could be reached by saline purgatives and sedative remedies I would prefer the latter

Opium may be advantageously given in the first stage in doses sufficient to relieve the pain and tranquilize the system. Dry cups, warm fomentations and soothing applications to the chest will meet the indications pertaining to the first stage.

Second Stage. The treatment in the second stage has reference to the promotion of resolution, palliation of symptoms and supporting the power of the system. Depletion by means of salines now is not admissible. The tincture of Iodine applied to the affected ~~part~~ side is frequently employed, and found to be

very beneficial in this stage.
I think it would be well
to have the chest covered
with an oiled silk jacket.
If pain and soreness con-
tinues I would then try
the use of stupes with the
some stimulating liquid, as
the Spirit of Turpentine.
The supporting treatment em-
-braces tonic remedies, alco-
-holic stimulants, and nu-
-tritious diet. As regards
alcoholic stimulants they
are indicated to an extent
to commensurate with the
dangers from failure of the
vital power. Stimulating
expectorants may be used.
Aromatic spirits of Ammonia

and squills in combination are said to be good for this. Mercury may be used in this stage if indicated, also opium is a most valuable remedy in this stage as in the first.

Fly blister or cups may be applied to the seat of pain. In every consideration pay good attention to hygiene.

By committing this to your kind consideration I trust it will prove satisfactory

Yours Obediently

E. H. Etchison.

January 1st 1884.

Edwin A. Lewis

[illegible]

[illegible] variety of causes, and not to any special or partial applications of [illegible]

[illegible]

ultimately

Tell the people that

[illegible]

[illegible]

[illegible]

[illegible] cost.

[illegible]

[illegible] connective [illegible]

[illegible] epithelial

membranes.

[illegible]

[illegible]

[illegible]

which occurs at its adhesion

way road

Above

signature may also affixed if

the seared each of the

I have been carefully enter-

[illegible]

[illegible] in the diagnosis, and

[illegible]

[illegible]

and what-ever there is of value

[illegible] there in. I certi-

[illegible] the carefu[illegible]

[illegible] charge of the

[illegible] Professor

[illegible] with, for [illegible]

[illegible]

Geo. Shurtleff.

1894.

Diphtheria.

Diphtheria is an acute specific contagious disease depending upon the injection of the blood and characterized by a local condition and general [illegible] systemic poisoning and having for its sequelae various paralysis.

Diphtheria is a disease distinguished as far as the commencement of the tradition on Nations at the time of the first century after Christ described the malignant Dysentaeum as a malady which removed many children in the bloom of life or [illegible] which spread was the terrible a fatal result and in some instances a return of [illegible] through the mucous [illegible] system ending in suffocation since the

[illegible] [illegible]
[illegible] electronics [illegible]
[illegible] and [illegible], at the present time
it is one of the most [illegible] and [illegible] di=
domes of both continents which in [illegible]
[illegible] [illegible] in [illegible] it [illegible]
as we [illegible]. The first thing consists
in [illegible] a [illegible] [illegible] of the [illegible]
[illegible] [illegible] of the [illegible] as [illegible] [illegible]
white [illegible] makes its [illegible] on the
[illegible] of the [illegible] the [illegible] [illegible] the
[illegible] of the [illegible] [illegible] [illegible] [illegible] of
[illegible] [illegible] which [illegible] [illegible] [illegible]
the [illegible] [illegible] [illegible] [illegible]
In a few [illegible] then [illegible] increase in
[illegible] [illegible] [illegible] [illegible] [illegible] the
[illegible] of [illegible] [illegible] [illegible] [illegible] [illegible]

like bits of cuticle on the surface of the
[illegible] spheroids and embedding the
[illegible] and [illegible] the [illegible]
[illegible] forming the glutinous coils of [illegible]
[illegible] grow out with [illegible] [illegible]
[illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible]
[illegible] [

[illegible] the [illegible] [illegible]
[illegible] time [illegible] [illegible] [illegible]
[illegible] nuclei being surrounded by
thin layer of protoplasm which also accumulates
in this way they may be moved [illegible]
microscopic, branchy and multinucleated [illegible]
masses resembling a [illegible] which [illegible]
may be lifted quite [illegible]
from the vitreous is formed, and into the [illegible]
[illegible] on the [illegible] membrane. The [illegible]
[illegible] optic nerve is a network of fibrous
[illegible] stems [illegible] and minute cells
[illegible] in the outer layer of the hyaloid
membrane may be lifted up by [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible]
between stem and [illegible] and [illegible]
in the meshes of the fibrous network, the minute

[illegible] deals meanwhile new details [illegible]
[illegible] and later [illegible] [illegible]
[illegible] and nerves [illegible] The membranes are
detached and results of preparation give fibrous
condition and abundant formation of fibro-
elements. The epithelial lining to the glomeruli
and [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] from [illegible]
below. The mucous-membrane of the larynx, air-
passages and [illegible] [illegible] changes in
the formation of [illegible] membranes. Where there
is a tendency toward [illegible] fibrin, [illegible]
[illegible] membrane [illegible]
and detached in the [illegible] formation of
[illegible] [illegible] The epithelium which
is destroyed is replaced by the [illegible]
[illegible] cells produced from the sub-epithelial

layer. In the septic, some of the masses of fibrin undergo vacuolation, rotate, form in immense numbers and the tissue back of the membrane is invaded by the micrococci filling the sub-epithelial and submucous tissue. It is generally conceded that the diphtheritic processes varying as they do are not alone apt to produce septic infection. Here the micrococci accumulate in great numbers and seem present a special relation to the cartilages, lymphatics, and even the bones are affected. Suppuration is frequent in consequence of the septic ... Cells the exudations of fibrin and the crowding of the tissues by micrococci involve the blood capillaries stopping the circulation, hence causing a necrosis which extends in proportion to the extent

of the membrane bounding. There is
occurs false membrane mucosa and sub=
mucosa from bronchus to [illegible]
discolored dark brick and brick worm
eaten like [illegible] mucosa or a dark
more firmly attached layer [illegible] which the
intense [illegible] of gangrene is observed.
The lymphatics of the neck whose vessels take
their origin in the tissues included in the
diphtheritic [illegible] are also involved. The
mesenteric [illegible] to the [illegible] and
[illegible] [illegible] [illegible]. The [illegible]
[illegible] [illegible] Submaxillary,
and Carotid and the chain of [illegible] glands
underlying the [illegible] vessels are more
[illegible]. The general connective and [illegible] cellular
tissue are swollen infiltrated with lymphoid and

[illegible] cells and there may also be extravasation of blood around the glands. The enlargement of the glands is due to a hyperplasia of the cells the stroma remaining unaffected. The membranous condition is a small proportion of cases extends to the bronchi involving only a part of the tube. The muscular tissue of the heart is soft and easily torn, the fibrillae are crumbled in, but degeneration and into the muscular substance extravasation of blood may be seen to various points in septic infection. The kidneys are intensely hyperaemic and swollen in some cases but little so in mild cases. Hyaline casts in the tubules and desquamated epithelial cells in all cases. In the brain there are numerous capillary hemorrhages with swelling of the nuclei of the glia cells in the cases of fatty and

[illegible] Diphtheria is a disease of childhood under the age of [illegible] years. The child is less liable to it and more [illegible] than to the fourth month, & up. The greatest mortality being attained from the second to the fifth year. Diphtheria is an inoculable and communicable disease being contagious, by a specific poison, the germ of which is not known. Although it is supposed to [illegible] to a similar opinion, Diphtheria occurs during the course of Scarlet-fever. Effects. Small-pox, and Typhus fever, it is more apt to occur as an epidemic during the winter, and always back away near at all seasons. Conditions of [illegible] favor its diffusion and increase its [illegible] [illegible] to extend the contagion. [illegible] pathology is

contains the poisons and excretions of the bowels and it is chiefly by means of this that the disease is communicated.

Articles of furniture, carpets, bedding, and wooden goods of all kinds, textiles generally adhere to with considerable tenacity, hence all persons who come in contact with the patient will be infected. The period of incubation varies from three to ten days. The constitutional symptoms are sometimes mild, there may be chilliness or rigors with moderate fever, languor and perhaps some in the back, pain in the head or limbs and inferior appetite. Still the patient may continue to walk about as if affected with bronchitis and slight illness. The symptoms of fight attacks are often severe

of all these we will consider croup or diphtheria, the malignant, septic or zymotic, and the hemorrhagic. Cases are often met with which have a more lingering attended by ulceration which may terminate in complete restoration, in less than a week with, in the worst, head cases which have a mild commencement may constitute cases of a fatal character especially in those zones in which hemorrhagic exudations the inner which water is diphtheria abates after the second or third day, but in some cases in fatal, also the mucous membrane of the throat. The tongue is coated with white and slightly inflamed, the patient complains of the commencement of a sensation of hard stand=ing means of the gravest cases.

Diphtheria and other forms of the commencement of diphtheria, in which the diphtheria and more other is a disease of such peculiarity particularly in the fauces. The disease attacks the symptoms may be more pronounced high fever, severe sore throat, headache, tumefaction, considerable difficulty in swallowing may be experienced and on the tonsils or hard palate minute granular white patches may then and finally adherent the tongue is covered with a thick whitish coating exhibiting well-marked the tip and edges finally adherent to the gums. During day or two it may be rapidly the false membrane extends to tonsils, pillars and the pharynx, giving rise to many troubles. The color of the membrane is of a

[illegible] but may [illegible] from the
[illegible] to [illegible] very [illegible] [illegible] the [illegible]
[illegible] is due to extravasation of blood, the
[illegible] [illegible] in the meshes of the
[illegible] fibrin, in the catarrhal form, [illegible]
[illegible] attack, such as [illegible] [illegible] membrane.
There are a few [illegible] which are [illegible] [illegible]
limited to [illegible] which reach their [illegible]
[illegible] the third day [illegible] [illegible]
[illegible] but not the [illegible] [illegible]
[illegible] the [illegible] [illegible] the [illegible]
[illegible] has [illegible] or [illegible] [illegible]
to [illegible] [illegible] [illegible]
[illegible] [illegible] of the [illegible]
[illegible] [illegible] [illegible] [illegible]
[illegible] to the determination of the [illegible]
[illegible] which [illegible] [illegible] the eighth day

[illegible] the detached parts constitute the
[illegible] in [illegible] the [illegible]
and isolated by the production of new epithelium
beneath, some, even the membrane is not
detached until some days later, healing
is considerable and convalescence may require
several days longer. The subsequent [illegible] may
be followed by albuminuria, hematuria or
other sequelae. The croupous form may
begin as an catarrhal form, and only con=
tinue to the formation of false membrane when
by the fourth or fifth day there is a sudden
elevation of temperature of fever increased,
[illegible] of pulse and the appearance of
the false membrane. Should the case resume
the severity of the croupous form, there is
beginning to set in with violent symptoms.

beginning with shivering, high fever, the temperature rising to 103° to 105°. Pain [illegible], [illegible], [illegible], [illegible], [illegible], [illegible] [illegible] [illegible]

In cases of exposure in opening wounds
which subsequently suppurate, chill has
supervened and the appearance of
fever in the changes which subsequently
cause the membrane assumes a yellowish-gray
shade like old leather, while the local
morbid process is proceeding the general
condition may improve, fever decline, appetite
return, and strength increase, at the end
of the first or beginning of the second week
or, more of the local process, after
the membrane detached and convalescence
thereby established frequently however while
the improvement is taking place the local
is spreading. Where an attempt is made
to amputate the disease, the lower side
difficulty is overlooking in cases not

[illegible] to
rid the throat of a tough secretion a
frequent condition of asphyxia may
come on at this period, if the tissue and
secretions in the pharynx or the discharge
may go on, the membrane spread the
swelling of the mucous increase and a
quantity of fibrinous exudation is poured out
by the salivary glands and the gums be=
come a bright red. Awakened sus=
picions of the setting in of gangrene.
The patient is now the animal unconscious
vomiting with unusual force with
convulsions, vomiting and diarrhoea, may
[illegible] by vomiting
of the colourless matter which is poured
in the stomach. The urine is scanty and

high potential [illegible] in many [illegible] [illegible]
[illegible] the coil is increased [illegible] [illegible]
[illegible] when this point gets [illegible] [illegible]
[illegible] [illegible] may take place
[illegible] the discharge may extend into the
[illegible] forward into the tube and
[illegible] or into the [illegible] [illegible]
[illegible] [illegible] spreads into the [illegible]
a sense of [illegible] is [illegible] [illegible]
which [illegible] through the [illegible]
[illegible] [illegible] [illegible] [illegible]
is a very [illegible] [illegible] [illegible] dis=
charge from the [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible]
galed [illegible] [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible] [illegible]
the membrane may spread into the

Eustachian tube earache noises in the ears and deafness will result if the mucous glands of the tympanum become involved in the inflammation, obstruction [illegible] occurs. Diphtheria from the throat to the air tube extension into the larynx. Laryngeal diphtheria is apt to occur in children and in old persons. The symptoms of laryngeal diphtheria are hoarseness, voice difficulty and croupy cough. Noises of this kind do not continue long. They usually terminate in total recovery or may cease from the production of deafness. Did not the thickening to cause the Eustachian or internal ear to constrict to restore will be produced. This is a disease of total consequence very

ventilating fluid from the mouth, which
[illegible] on which project white
patches of false membrane form which
[illegible] very [illegible].
The [illegible] has a highly [illegible]
from the [illegible] membrane mixed
with the [illegible] and the [illegible]
[illegible] of
[illegible] but on removal of the [illegible] matter
the [illegible] is [illegible] and
[illegible] the glands
of the [illegible] and [illegible] are [illegible]
[illegible] and [illegible] and [illegible]
to the [illegible] when [illegible] [illegible]
[illegible] is of a [illegible] colour and [illegible]
the [illegible] [illegible] and [illegible] and [illegible] the
temperature was [illegible] above [illegible]

frequently 100 or lower. Loss of appetite, nausea and vomiting, diarrhoea from [illegible] of the [illegible] stomach and bowels, and being [illegible] with [illegible] and [illegible] is generally the result. The mental [illegible] is that of [illegible] the mind [illegible] but slowly the intelligence becoming clouded as the last sort is reached. The result is a [illegible] of the [illegible] of [illegible]. Then recovery takes place, the fever [illegible] in form, frequency and [illegible] according to [illegible] and the improvement of the [illegible].

Convalescence being necessarily slow.

The [illegible] form is an extension of the [illegible] form. The [illegible] [illegible] is attended by [illegible]

[illegible]

[illegible]

[illegible]

[illegible] and hemorrhage from [illegible]
[illegible] appear to [illegible]
[illegible] the [illegible]

The [illegible] from [illegible] may
be [illegible] with [illegible]
[illegible] of the [illegible].

If the tissues there are [illegible] [illegible]
[illegible] at the [illegible] of so many [illegible]
[illegible] a [illegible] [illegible] [illegible]
[illegible] [illegible] the [illegible] the [illegible]
[illegible] [illegible] the [illegible] of the [illegible].
[illegible] [illegible] and [illegible]
[illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible]

If the [illegible] [illegible] is [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

[illegible] from [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible] [illegible]
secondary septicaemic and septic [illegible]

[illegible] which
invade the alimentary tube, have manifestly
been [illegible] the largest receptacle in which should
be frequently emptied and the rectum injected
the urine should be examined with a view to
[illegible] of albumen. Dilute Nitric Acid, Chloride of Zinc, Bichloride of Mercury, Chlorine, Salicylic Acid, A vapor
should be constantly applied to the bowel with

a Spray douche. [illegible]
and moved with a solution of [illegible]
[illegible]. Alkaline phenol, [illegible],
Carbol. Acid. Chlorine. Lime water. Borax. [illegible]
[illegible] the [illegible] [illegible] [illegible]
is given internally. Cod liver oil [illegible]
[illegible]. Allow it to free
cut septic infection and also as a stimulant and
food. Drink is given [illegible], the temperature
Emetics are sometimes used [illegible]
displacement of the uterus so [illegible] possible
of opening. Plumbago of iron. Phenol. [illegible]
persons [illegible] [illegible] [illegible]
and [illegible] great circumspection to avoid infection.
The patient should be kept alone and as much apart in
the room as [illegible] the nurse. The room should be well
aired, no one should be allowed to see the sores & bowels
[illegible] and immediately [illegible]
[illegible] the [illegible] [illegible]
[illegible] [illegible] [illegible]
[illegible] [illegible] [illegible]
[illegible] [illegible] [illegible]

Respectfully submitted to the
Faculty of the University of
Maryland.

A Thesis on Alcoholism.
by C. S. Atwood
Session of 1853—54.

Among the numerous agents of disease and suffering, there are few whose few are more fatal, and some more widespread and far reaching in their effects. It is not confined to certain localities as "low swampy districts, southern bank of the south &c; but from time immemorial it has been one broadest epidemic throughout the civilized world. And, today it sets authoritative the thing of homicide where such to say it formerly at the hands of their parents and the degree of ignorance and the fearful ignorance of their homicide.

Such is certain as sectors; and the delegated and mutual exchanges under

are carry it by the short of it are called Alcoholism.

Like many other diseases this is divided into two stages, acute and chronic according as they are manifested early or later in the course of the disease.

The acute form is due to a larger quantity taken in a comparatively short time while the chronic form is the result of its continued use for a long time.

The habitual use of alcohol produces a deleterious effect upon the system at large from the fact that it is readily absorbed and spread to the tissues especially the softer one which con-

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tain water elements for its food. Alcohol has a strong affinity. Owing to this fact it is the cause of many diseases, among of which are dyspepsia, cancer, cirrhosis of liver, fibro-interstitial nephritis, and acute delirium delirium tremens &c.

Pathology of acute Stage. — The mucous membrane of the stomach is in a hyperaemic state, the mucus being in greater extent of time universal over the stomach. The fissures and fissures are also found in this hyperaemic state though less often than in the stomach. The cause of this hyperaemia due to irritation and precipitating the of irritations. The brain membrane

and subtunica becomes edematous. This
condition is ordinarily called "red softening."
Pathology of chronic stage. — The mucous
membrane of the intestinal tract is in
a chronic catarrhal state. The connective
tissue actually around the tubular
glands undergoes hyperplasia, and, in
contracting encroaches upon the cavities
of these glands causing them to atrophy
and degenerate. The mucous membrane
is at first hypertrophied. But after-
wards thinner and becomes atrophied.
Very frequently there are superficial ul-
cers — to the erosions of the follicles.
The submucous connective tissue always
becomes hypertrophied. The extension
next to the stomach is the terminal ileum

seat of these changes.

The liver also undergoes certain changes which seem to be a favorable site for these changes. It may be enlarged with its connective tissue in a state of hyperplasia or it may be shrunken, dilated and hard in a cirrhotic condition or it may have undergone fatty degeneration.

The connective tissue of the kidneys is sometimes found to be in a state of hyperplasia with subsequent contractions forming the condition known as chronic interstitial nephritis. These diseases are less frequent than those of the liver.

The constant presence of alcohol in

the blood vessels is causing an excess of fatty matter. The smaller vessels become infiltrated. The functions of the sympathetic are depressed, causing in many instances, local congestion.

The walls of the veins frequently are seen to have undergone a thickening. The muscular tissue of the heart may undergo fatty degeneration, causing formation similar changes in the circulatory system.

The structure of the nervous tissue also undergoes important changes. The ganglion of the brain becomes hypertrophied, the ganglionic cells atrophied, the nerve-tubes lose their direction and the vessels undergo atheromatous

changes. And as a result the brain substance becomes firmer and harder, many vacant spaces which are filled with fluid — and the brain membranes become more opaque and thick.

Symptoms. — Taken in sufficiently large quantities Alcohol produces the immediate effects known as drunkenness. The opportunities for observing this condition are unfortunately too frequent and need not be described in detail here. But the symptoms of profound intoxication should be mentioned on account of the approaches it involves. This condition is characterized by loss of consciousness and of power

over the muscles. The patient lies in a stupid unconscious state and frequently the urine and feces are passed involuntarily. The face is flushed and congested the lips swollen and purplish the veins of the face and neck are distended the pupils contracted the breathing is slow and stertorous and the pulse is full and slow. These are the symptoms observed when a person is profoundly intoxicated. Just as degree we manifested a set of symptoms which denoted what is called Acute Mania Delirium. This closely simulated, in some respects the more chronic form, delirium tremens. The examination into the history of the case

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known, will at once enable one to differentiate between the two.
The acute delirium follows an obscure incubation and ensues on a suspect fever from the sudden change due to chronic alcoholism. After most the patient is, perhaps, indulging in a sudden debauch or drinking heavily for a short time and frequently is also subjected to some mental worry or excitement and by these combined influences the system yields to the delirium.
The patient lose his appetite, become restless and peevish then excited and violent. He is the prey of an exaggerated imagination. The quiet the delirium may be as violent in character as delirium

tumor, finally by rotten suppuration and the patient succumbs readily to treatment.

The symptoms of the chronic stage, though more gradual in development, have traces of the acute case, are more sensible among the minds of great endurance and seldom recurring under middle age. As the disease, during its affection the brain and nervous system including the mind of course is implicated, and, as the disease progresses, the intellectual faculties become blunted, the memory treacherous, the judgment less accurate, the faculty of observing is no longer manifested, the moral sense becomes deformed, the

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Therefore, appearance is unnecessary the family and business interests are neglected, the bonds of brotherly association cease to exist the patient becomes fretful and childish, neither or fulfils uncharitably and ultimately the mental condition declines into imbecility.

The stomach is more or less irritable and will not tolerate food, usually of a highly stimulating character and vomiting frequently occurs after eating. The irritability of the stomach early in the morning is a most characteristic symptom of chronic alcoholism. It is due to a result of stimulus and is usually allayed when the patient gets his "morning drink".

Owing to the morbid changes which the tissues and liver undergo and especially the obstruction of the latter effusions into the abdomen take place giving rise to ascites and sometimes to an edematous condition of the lower limbs. Also large bags form under the eyes indicating insufficiency of the kidneys.

These are some of the symptoms and conditions of chronic alcoholism: but, subsequent upon and intimately associated with it are a set of symptoms which apart, in some respects, from the other known as delirium tremens.

As to the immediate causes of delirium tremens there are two terms of:

whether the effect be due to excess of stimulus taken by a chronic alcoholic or to the sudden withdrawal of it when he is in a condition of the tissues and fluids demanding it to resist first and serve greatly to the detriment of the nervous system.

"Both theories are correct" says Prof. Hunt. "Tremens is incident to the latter form of drinker, is incident also occurring in persons who attempt to reform from intemperate habits: persons who are unable to procure liquor; or temporarily from drinking to the excess of some debauch and then it is only some more drinking intemperate habits are thrown into tremens.

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[illegible] Thus it are to strong [illegible] of [illegible], [illegible] or majesty.

Character and Symptoms. — It was [illegible] with intolerance of the [illegible] use of [illegible] for both good and [illegible] restlessness [illegible] [illegible] tremor [illegible] of the tongue [illegible] [illegible] [illegible] are of the great character as to warrant the patient to consider. The patient suffers little if any pain [illegible] is no febrile movement of any consequence, the pulse is feeble and the surface is cool. There are some of the symptoms of the cutaneous stage or that which is commonly called "Carrots

This lasts but two or three days, when it is succeeded by the delirium tremens which is attended in a peculiar mental derangement which is characteristic of it. It varies in different patients.
The expression is wild, the eyes are vacant or staring. The patient is restless and constantly in motion. His mind is so long occupied with trifling gross impressions to another as it indicates his inebriate manner of thinking. He becomes the prey of an exaggerated imagination and is constantly in a confusion of some impending danger or of personal violence at the hands of an imaginary

fear - All his surroundings appear unnatural to him. His friends seem to him unreal and his imagination transforms the slightest objects into giants or monsters according to the vicissitudes of his tormenting fancy -

For some instances are the patients hemmed in with these imaginary things until he fain would to wear in them they inflict their minds crushing themselves on the ground - beneath -

The delirium is always worse at night than in daytime -

Immediately of the smaller is a permanent fixed not constant sensation notwithstanding it enters into the name of the disease. Vertigo - is a

more constant symptom since the
last century it has come that the disease
be called Delirium Vigilans.
Vigilance is evidently an important
factor in the cause of the disease
for which its presence or absence is
the turning point for the diagnosis,
treatment and prognosis.
Often we have found deep the mem-
brane is not so much so. If unconscious
persist, the appetite increased vomit
and extreme prostration, not unlike
that of the advanced stages of typhoid
insane, subsultus tendinum come on
the pulse increases feeble and frequent
the patient sinks into a comatose
state and death takes place with the

seem.

The affection is evidently cerebral in character as it is shown by the convulsive phenomena: though the nature of the morbid condition is not definitely known. There is no increment of inflammation nor is congestion an essential element in the pathology. There is a general excess of cerebrospinal fluid in the subarachnoidal space and ventricles and the brain substance is more or less oedematous.

Diagnosis. — As a rule the diagnosis is not difficult to make the convulsions fits so characteristic and the history of the case of these fits almost sufficient to establish the diagnosis. Care must be

complications, known. From which it is to be distinguished by acute alcoholic delirium, tremens, cerebral hemorrhage etc. but the most important one is pneumonia.

The first may be distinguished from the fact that it occurs only in the acute stage, the tremens and convulsions of delirium tremens are wanting and it terminates much earlier. Pneumonia may be confused by the observer or certain in terms of note the strange fever accompanying the delirium which accompanies alcoholic pneumonia is not in delirium tremens but it occurs during the pneumonia and when pneumonia is the

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complication it arises during the de-
cline of fever and to which
fever may be owing. In the absence
of symptoms other than delirium -
treatment. — Delirium tremens and
jaundice treated by antiphlogistic measures
arose from the supposition that it
indicated inflammation or cerebral con-
gestion: but of course these measures
were thrown aside when it was
understood that neither of the above
conditions is present in this disease.
It should be remembered that the
disease has a tendency under favor-
able circumstances to cure itself
in most cases remedial agents are
necessary. And in the selection of

these two points are to be admirably
observed by, giving plenty of rest and
procuring sound sleep.
The stomach bears an irritable state
well, and lime water, are the best
articles of diet, you can employ.
Begin with small quantities and in-
crease, giving at short and regular in-
tervals. In some cases of a bilious
character the addition of a little ale
forms by the stomach. Beefteas and
broths are good admirably when com-
bined with red Bordeaux which both
stimulates digestion and acts as a
cerebral sedative.
The great object in the treatment
of this disease is to prevent sleep

for without it recovery is a matter of
improbability. But, to prevent it,
large doses of Opium should not be
given as was done formerly. Still some
says it is best to begin with opium
or its preparations, and increase the dose
hourly until sleep is procured. It
should not be pushed to the point
of producing narcotism. And if, on
fair trial, it does not prove a tran-
quilizing agent it should not be
given further. Could these
satisfactorily by the limited administ-
ration of Alcoholic stimulants
through this treatment alone in
exceptional cases only a few cases
when the vital forces seem to

Jaborandi stimulants should be used
freely.
Fortunately Tonga only given is a
good agent and it exerts a sedative
influence over the heart, eliminating
delirium and favors sleep.
Cathartics are contraindicated
Digitalis given in large doses is said
by some of the Australian doctors, to have
a tonic effect in Delirium Tremens.
Inhalation of Chloroform is very
good but should be given cautiously.
The Tincture of Gelsemium given in large
doses is a valuable agent and is very
much used by some of the best doctors
in the country. Many other agents
have been used and are still used but these

[illegible]

[illegible] from the other measures, decide from
[illegible] criterion to be considered. The rule
should [illegible] be [illegible] quiet
quiet and should be remote from outside
noise. The decorations and furniture
as well as the curtains if any, should be
plain for obvious reasons.
The patient should be seated in any
[illegible] possible and everything done in
the room should be done with a
view to [illegible] quiet.

Tobacco,
and its Effects.

J. K. Jordan

Tobacco and

Tobacco, and its Effects.

The use of Tobacco was comparatively unknown to the world up to the discovery of this country; we say "comparatively", for there was one species, which was cultivated & used in China before that time, but this was an inferior species, far less active & agreeable.

Tobacco, as known to us, is that designated in the Pharmacopeia as Nicotiana Tabacum, an annual plant, now cultivated in nearly all parts of the world, and to a large extent in the United States, especially in Virginia.

It is raised from small plants, which are obtained by sowing the seeds in a "hot-bed", prepared with a good deal of care, and when the plants are sufficiently large,

they are transplanted (usually in May) to the fields, which have been previously prepared for their reception.

It is a crop which requires constant care & attention, from the time the seeds are sown, until it is put on the market in the form of Manufactured Tobacco.

The plant grows from three to six feet in height, having large leaves, the lowest of which often measure two feet in length, by six inches in width; and if allowed to go to "flower", it is surmounted by a stem having numerous bells of a beautiful rose color.

The "flowering" however is prevented by the process of "Topping"; that is, the top of the plant, after it

has attained a considerable size, is cut off. This tends to the more perfect development of the leaves, which are the valuable portion of the plant.

The Harvest is in August, when the plant is cut, the leaves stripped from the stem, and hung in the "Drying House", where they are subjected to a considerable heat, to make them "sweat", after which they are dried & packed into hogsheads, and sent to the manufacturer; here they are subject to various processes & are then ready for consumption, in one of the forms of Smoking or Chewing Tobacco, or Snuff.

When taken from the field, the leaves, are of a green color, with

little or no odor; but after being subjected to the drying process, they become of a yellowish-brown color, with a strong narcotic penetrating odor, and possess a nauseous acrid taste.
Such is a brief history of its preparation, leaving out much that is interesting but still superfluous here.
There is good reason to believe that the plant, as now used in almost every country of the world, was a native of Tropical America, and its use was adopted by the Spaniards, from the Indians of that region. The Spaniards carried it to the Court of Lisbon, where the use of it, was learned by Nicot, the French ambassador to that Court,

and Nicot, in his turn, introduced it into France. From Nicot we get the officinal name Nicotiana.

Sir Walter Raleigh is supposed to be the wretch who is doomed to bear the blame of the introduction of the much abused luxury into England; while its use came to the Americans by the inherent desire, we may suppose, to obtain something, which, like the Lotos, would bring oblivion of all they had left behind "in their Island home far beyond the wave".

It is now used in every country of the world, which possesses any civilization (in the modern acceptation of that term), as well as in a good many other countries, in

which no such civilization exists.

Tobacco is consumed, in these countries, in the three forms mentioned above, viz: Smoking and Chewing tobacco & Snuff. The first & most important of these is Smoking tobacco, in as much as it is most generally used, and has attracted most attention, and as the other two forms have fallen into comparative disuse, on account of the great prejudice against the habit, which is certainly a very unrefined & disagreeable one, not to say filthy.

So that we will confine our attention principally to the Effects of Tobacco-Smoke upon

the system generally.
A great deal has been said on this subject, both pro & con; and the most extravagant opinions have been expressed on both sides; on the one hand, tobacco has been upheld as the most harmless of luxuries, on the other, it has been denounced as the source of every trouble, both mental & physical.
Let us then first look at the composition of tobacco smoke, as it is taken into the system, and examine the effects of the various constituents upon the different organs.
Of course, different tobaccos vary in the percentage of their constituents, and some specimens contain

materials not found in all, but we will take the following as the leading constituents (for which of course we are indebted to the researches of another).

1) Water, in the form of vapor
2) Carbon, in the form of soot.
3) Nicotine, also a vapor, but which is readily condensed into a colorless, oily substance, when brought in contact with a cool surface.
4) Carbon Monoxide & Carbon Dioxide.

The Nicotine is itself a complex substance and may be resolved into

a) Nicotine proper.
b) Empyreumatic substance, volatile, and containing Ammonia & the dark Resinous Bitter Extract.

From a strictly chemical point of view, the above would be a very

unsatisfactory analysis, but for all practical purposes it is sufficiently complete.

We will now examine the Physiological action of these constituents, and then see what diseases are likely to accrue from them.

1) The water may be considered harmless & may be passed over.

2) The Carbon, being in a free state, & in finely divided particles, will act as a mechanical irritant to the parts with which it comes in contact, and when present in large quantities, as is the case with confirmed smokers, will color the secretions of the Bronchial tubes, and even the teeth. The amount of this carbon in a single cigarette may be guessed, when a single

mouthful of smoke blown through a piece of clean linen will perceptibly discolor it.

3) The Ammonia (of the Nicoline) is the substance that "bites" the tongue and makes the throat so dry, causing a large amount of water to be taken in by the smoker. It also excites the salivary glands to hypersecretion, causing expectoration in the beginner.

4) The Carbon Dioxide produces the langor, headache &c, but being present in small quantities, it requires sometime for the habitual smoker to feel its effects.

5) The Carbon Monoxide is either entirely absent, or present in very small quantities, according to the rapidity with which the tobacco

undergoes combustion, but when present in sufficient quantity, it is a very poisonous agent, producing drowsiness, unsteady movements of the heart, tremulous or convulsive movements of the muscles & vomiting (through the blood).

6) The Bitter Extract is the substance which gives tobacco its sharp, disagreeable, nauseous taste; & when its effects are long continued upon the youthful victim, makes him long to be anywhere, anywhere, out of the world; away from kindred & friends and especially the delicacies, which would normally tempt his appetite. It is this that proves so disastrous to his aspirations. The parent sees his langor & palor, recognizes

the cause and proceed to remove it by the proper course of treatment and training.

7) Nicotine proper, produces tremor, palpitation of the heart, and finally paralysis. It is a most powerful poison.

8) The Empyreumatic substance gives the peculiar odor to stale tobacco-smoke, which is also communicated to the breath & clothes of the smoker. It is this that makes the odor of an "old" pipe so disagreeable.

These are, briefly, the specific effects of the constituents; let us now look at the action of tobacco as a whole.

When the poisonous elements are absorbed by the blood &

carried into the system they affect almost every part of it.
The Stomach is the first to give indication of the ill effects. This organ tries to expel such of the poisons as come in contact with its mucous membrane, so that the phenomenon of vomiting is set up, provided the amount of the poison is sufficient to materially interfere with the function of the organ. The poison, if stopped at this point, soon passes off; otherwise, it would be a greater evil than it is to the human race.
If the poison, however, be continued, the Brain & Nervous System are next to come under its influence; the results are wakefulness, twitching, or even spasms of the muscles;

swimming of the head, and convulsions. These muscular spasms may proceed to the chest, and even to the heart, producing, it may be, fatal results, Dyspnoea or Syncope.
But constant use, fortunately or unfortunately, modifies its action; as in the use of Opium, the system becomes accustomed to its effects, adapts itself to the new call upon it, and ceases to give evidence of the more serious symptoms.
The poisonous substances of tobacco are eliminated by the three great channels viz: the lungs, the skin & the kidneys.
The lungs & skin exhale the volatile elements, while the kidneys eliminate the Nicotine, which is not volatile at the temperature of the

body, and the Bitter extract, a soluble solid. Thus, if the lungs are not in a proper condition, the skin is called upon to do over-work, and vice versa, while the kidneys are called upon to eliminate a substance, which is unnecessary, so that they are also over-worked. But within certain limits, the disorders produced are functional, not organic, so that if the habit of smoking be discontinued, the necessity for over-work is removed, & the organs are soon restored to their normal condition; but if the poisonous effects are continued beyond the limits (which of course vary in different people), organic disorders are brought on, which are not

so easily got rid of.
Having thus hurriedly reviewed the physiological action of tobacco, we will now look at the pathological changes, which take place under its use.

I. On the Blood.

The prolonged inhalation of tobacco smoke makes the blood become thinner due chiefly to the Ammonia and Carbon Monoxide. The blood being thus defibrinated to some extent, flows freely from a wound not having the elements to cause coagulation, & thus in extreme tobacco poisoning, a fatal result might accrue from a wound which would normally be considered trivial.
But the most marked effect upon the blood is evidenced by

the changes which take place in the red corpuscles from the action of the Carbon Monoxide; they lose their round & regular outline and become oval or of irregular shapes, and also lose their attraction for one another and float along sluggishly in the current; many of them are disintegrated, & the fibrinoplastin & ferment thus set free would cause clotting within the body, were it not for the counteracting effects of the ammonia.

But even in this serious state, the blood will quickly regain its normal thickness, & the corpuscles their vitality, if they be relieved of the poison for even so short a time as one day.

This change in the blood takes

place more rapidly, if the stomach is empty, so that few men can enjoy a smoke on an empty stomach; and vice versa, when the stomach is full the change in the blood takes place more slowly, hence, one enjoys smoking immediately after a meal more than at any other time. It is easy to understand why the change should take place more rapidly, when the stomach is empty, for absorption, of course, takes place more easily & quickly from the empty stomach.
Again, the evil effects are more easily produced when the smoking is carried on in a close room or car, the air of which is already impregnated with not only the

tobacco smoke, but also carbonic acid gas (Carbon dioxide) previously exhaled, by the smoker himself, as well as by others, who may also be in the room or car. Under these circumstances, the smoker inhales, over & over again, the poisons already floating in the air, while he is unable to get rid of those, which he is himself driving from his cigar or cigarette. And again, if much water is taken into the system with the smoke, as is apt to be the case with the new convert to the art, this helps further to dilute the blood & hold the poisons in solution, or suspension, and still further increase the evil effects, and also renders the poisons more difficult

of elimination

II.) <u>The Digestive Organs</u> are next to be considered.

It matters not how habituated to the use of tobacco one may be, the poisons still continue to produce abnormal conditions in these organs. Tobacco impairs appetite & interferes with digestion, and the habitual smoker is often heard to say that tobacco relieves his hunger. The Nicotine diminishes peristalsis, and thereby interferes with digestion; the Bitter Extract also has the effect of making the mucous membrane (or more properly the glands of that membrane) secrete irregularly, which also, of necessity, interferes with digestion; & this factor, adds

to the above, makes Dyspepsia an almost inevitable result.

III) On the Salivary Glands Tobacco has also an effect; viz: it excites them to hypersecretion.

It has been urged, as an argument against the habit of smoking, that as the saliva is necessary to digestion, and as this over action is apt to cause expectoration, in order to get rid of the excessive amount, the smoker thus loses a great deal of a fluid, without which digestion must be incomplete, and not only is the starch not converted into sugar, but the food is not sufficiently lubricated for swallowing.

This would be a valid argument, if men smoked & eat at the

same time, but this we know is not the case, and after smoking, as soon as food is introduced into the mouth, there is always an abundant flow of saliva; but though this argument is easily refuted, there is one which is not. When this over-action is excited, the smoker must swallow some, if not all of the saliva, and it thus acts as a vehicle to carry the poisonous substances into his stomach, while if he expectorated freely, much of the poison would be thrown off.

IV On the Throat.

The mucous membrane covering the tonsils and all parts of the throat, becomes inflamed, from the constant irritation set up by the various constituents of the

smoke, and hypertrophy of the tonsils follows in most cases. This, however, is not constant, but in the majority of smokers some such trouble will be found, though it may exist for some time, without their being conscious of any inconvenience from it.

V.) On the Heart.

The action of tobacco on the heart has been warmly argued, some believing it is almost of no consequence; others, that it is attended with considerable danger. But there is no reason to believe that the action is sufficient to produce any structural change

in this organ. But the action of the smoke, on the contrary, may tend to check excessive action of the heart, and thus prevent structural change. For instance take a man, who has to endure hard labor, & whose heart is consequently called upon to do excessive work, in order to supply the demand; such a heart is in danger of hypertrophy or dilatation. Now the action of the smoke, not on the heart itself, but on the brain, & through it on the Pneumogastric, would slow the heart & prevent any such change.

But while tobacco may thus

prevent structural change, there can be no doubt that its use may seriously interfere with the function of the organ. All who smoke have experienced at times a feeling as though the heart were rising in the throat, or of breathlessness and palpitation, or even severe pains in the region of the heart. This is due to the action upon the sympathetic system, causing muscular spasms, followed by enfeebled action.

VI) On the Lungs.

As those, who are not addicted to the use of tobacco, stand always ready to lay everything they can

to its charge, so it has been accused of being the direct cause of Consumption, Bronchitis &c, in many cases just because the victim of these diseases happened to be a smoker. Now, while statistics show that in a certain number of patients, affected with such troubles, a majority of the males were smokers, still this leaves out all the females, who are equally liable to the diseases, or nearly so, and who are as a class non-smokers; and even in the males, the majority of smokers is in every case very small, so that tobacco cannot be considered

as a very fertile cause of these troubles. But we do not mean to say that tobacco is entirely free from blame, for there are some cases, the origin of which may conclusively be proved to be tobacco.

Tobacco may be & is, in all cases, injurious to those who are already suffering from such diseases, and hence its immediate discontinuance should be urged, as it will most surely aggravate and prolong, what might otherwise be easily got rid of.

VII) The Teeth are not injured by the use of Tobacco, except by the

formation of Tartar. Tartar consists of the salts of Calcium, Potassium &c chiefly the sulphocyanide of Potassium, which are normally contained in the saliva; and when this fluid is present in abnormally large quantities, of course larger quantities of the salts are deposited upon the teeth; but even this may be prevented, if proper care is given to cleansing them. On the contrary, the carbon of the smoke contains a certain proportion of creasote; this carbon is deposited upon the teeth, & while it discolors them, the creasote tends to preserve, rather than

ingin them.
We now come to the question which is so much discussed viz:
Is cancer a result of smoking?
It is considered by many that tobacco stands to cancer in the relation of Cause and Effect; but this is of course simply ridiculous, as cancer existed long before tobacco was introduced as a luxury. Again, cancer is found in many of the lower animals, which of course could not have derived it from tobacco. A still stronger argument is the fact that cancer is known to be more prevalent among females, who do not smoke,

than among males. Thus we see that smoking cannot be the cause of the general disease. But cannot a local cancer result from smoking?
This is a different question, & must be answered in the affirmative; but it produces the local cancer only, as any other irritant would. For instance, cancer of the tongue is excited by constant irritation from a decayed tooth; cancer of the throat may arise from some foreign body being lodged in the throat; cancer of the lip may come from the constant rubbing against the

lip of a rough pipe-stem. In nearly every such case we find that the smoker has been in the habit of using a foul pipe with a short, rough stem which has the threefold disadvantage of first, allowing the nicotine &c to be poured out upon the lip, instead of being condensed on the surface of the stem; second the short rough stem is itself an excessive irritation, as it is not supported by the hand, as a long one would be, but is held between the teeth and then pressed firmly against the lip; third, being short, it must become hot, & the heat is an additional source of irritation.

We now come to the effects of tobacco upon the Nervous System.
This question, alone, is one of vast scope and a full discussion of it would require a volume, instead of the few pages which we will devote to it here.
In the first place, let us look at its effects upon the organs of special sense, beginning with the Eye
The first thing we notice, after habitual smoking, is some slight and almost inappreciable impairment of vision. The patient doesn't see quite as well as formerly. The letters become confused and the lines dance or fade out for a

moment before his eyes, or sometimes dark spots are seen to float before them, which spots assume various colors, when he raises his eyes from the page; he may shut his eyes, but the spots remain as distinct as ever, but on keeping them closed for a moment, they disappear. Sometimes he even experiences a pain in the back of his eyes, especially when looking at white objects.

A striking characteristic of the eye of the confirmed smoker, is the length of time the retina retains the image of an object. In extreme cases, it has been noticed that

an image may be retained then for two or three minutes, instead of about 1/30 of a second, which is normal. That this is the immediate effect of smoking, is proved by the fact that this power begins when smoking is begun, increases as it is continued, and decreases as it is discontinued. If we examine the eye of the confirmed smoker, we notice that the pupils are abnormally dilated. This is the effect of the nicotine upon the third pair of nerves, which supplies the circular fibres of the iris. These fibres become paralyzed, and the radiating or dilator fibres are

left free to act, and the pupil thus becomes dilated. This causes the defective vision, the pupil failing to regulate the amount of light which enters the eye; the defect will, of course, be more apparent on bright days. Besides this, the patient may have lost the power of distinguishing certain colors; he may also suffer at times with Diplopia, the effect of the nicotine on the branches of the third pair, running to the muscles of the eye. Finally, & most serious, is Atrophy of the Disc, causing blindness, under the name of "Tobacco Amaurosis".

Next in order of the special senses is the Ear; the effects here, however, are not so marked. The principal effect ~~being~~ is an occasional acute ringing sound in one ear, rarely affecting both at the same time. This is disagreeable, but it causes no impairment of hearing; for a watch will be heard distinctly if held to the ear, while the ringing sound is going on. There may also be some slight impairment of hearing independent of this, the patient being unable to distinguish very soft or very loud sounds, but the change is so slight as to be almost imperceptible.

In regard to the other Senses, viz: Smell, Taste, & Touch, little may be said, as smoking has no effect upon either, unless it has an indirect effect upon Smell in exciting a Nasal Catarrh in those predisposed to that affection, or in aggravating one already existing. But there is no doubt that Snuffing has a deleterious effect upon Smell, even going so far in some cases as to completely destroy it.

As the second class of effects upon the Nervous System, we will look at its action upon the Brain.

Here we find all sorts of disorders

laid to the account of tobacco; but when we begin to examine statistics and authorities, we find that, as in other cases, when no immediate cause can easily be found, the evil effects are believed to be from Tobacco; and in some cases, tobacco gets the blame, even when the real cause can be found, but the patient, or someone otherwise interested, does not choose to give that cause.

Apoplexy is a disease, or rather an accident, which is often adduced as a frightful effect of tobacco, and a consequent argument against its use, but in statistics which we have at hand, out of eighty

cases of death, supposed to be apoplexy from tobacco, only eleven were proved to be true apoplexy, and of the eleven, only one was an excessive smoker. Again Vertigo has been brought forward as another formidable argument. But here too the evidence is not sufficiently strong, to establish the truth.

It has even been said by some bitter opponents of this luxury that it is a fruitful cause of Insanity. This, too, is an absurdity, for if it were true, there would, of course, be a marked majority of the males, who smoke, over both the males & females, who do not smoke,

Nil statistics show us such majority.

What, then, are the effects of smoking, upon the Mental faculties? It depends very much upon the condition of the person, whether smoking shall have a bad or a good effect upon him.
If he is about to enter upon a day of mental labor, with his brain rested ~~from~~ by the previous night's sleep, it is by no means proper to commence with a smoke, for then, it will impart to him a heavy dull feeling, which added to the interference with digestion, spoken of before, will incapacitate him for the work before him.

Still worse is it to smoke before breakfast; for added to the other two, there will be the loss of appetite, so that he doesn't take in enough of food to supply the demands of the body. He, therefore, goes through the day with the dull feeling, & goes home at night disgusted with himself and with everything around him. But on the other hand, take a man, who has gone through a day of mental application, without smoking; his brain is excited, & he experiences the feeling of weariness which follows a tired brain. If now he indulges

in a smoke, it seems to soothe & revive him, and promote a sweet & refreshing sleep.
The great difficulty about this point is, that a smoker cannot, or will not put off smoking until he really needs the effects of it, but whenever he is under any mental strain, his system, being accustomed to the soothing influence of the smoke, demands it at frequent short intervals.
But some one may say that a man should not feel the need of this influence, and such a desire is abnormal. We admit this, but they must also remember that

in this day of progress, the Brain is called upon to do more work than it should naturally do, and must therefore have unnatural restoratives.

We now come to the third class of effects of tobacco upon the Nervous System, its action upon the motor and sympathetic nerves. But very little is known of this. The action of nicotine upon the motor nerves is to excite, through them, muscular agitation, followed by temporary weakening or suspension of their action. The most striking example of this is the fatal palpitation of the heart.

It is also shown in the twitchings of the eye-lids &c, so well known to all smokers.
Upon the sympathetic, it may also cause muscular spasms, as evidenced by the pain and sickness of the stomach, followed by spasm of the muscles and that disastrous vomiting, which so quickly relieves the young smoker of all his aspirations.
The human race is prone to commit many indiscretions, and, among them, we find a proneness to the use of tobacco.
The question, then, naturally arises "Is there not some way

to mitigate the effects of tobacco, so that its evil effects will be reduced to a minimum?" We say Yes! The proper way to smoke is to use a pipe, with a clean bowl, made of some absorbent material, such as clay or meerschaum, with a long stem, at the end of which is a smooth piece of amber, for the mouth.

Here we have everything requisite to the prevention of injury. The bowl is clean, and able to absorb much of the empyreumatic oil, nicotine &c, and thus keep them at a distance from the mouth; the stem being long, has a large

condensing surface, by which the nicotine is further prevented from getting into the system; again, the length of the stem requires the support of the hands, and this relieves pressure upon the lips, and moreover, the heat of the pipe is kept at a distance from the mouth, and the whole volume of the smoke is cooled, to some degree, before entering the mouth; again the mouth-piece being smooth, the irritation upon the lips is reduced to a minimum.

A still better form of pipe is the so called "Turkish Pipe", which

has not only the long stem, smooth mouth-piece and absorbent wool, but also a vessel containing cold water, through which the smoke is made to pass. This has an additional mode of getting rid of the nicotine, which is very soluble in water, and, at the same time, the smoke is relieved of all its irritating heat, and makes the mouth delightfully cool.

But this is an extremely inconvenient method of smoking, as the apparatus cannot be carried around; and as convenience adds to comfort, and as comfort is the half of pleasure, men fear

generally resorted to one of two methods: the Cigar or the Cigarette. The popular idea is that the cigar is the least injurious of all forms of smoking; but this is erroneous for many reasons. A cigar is short, and has no surface for cooling the smoke; when the cigar is first started, some of the volatile principles (nicotine &c) are volatilized and pass up toward the mouth to be then condensed in the upper part of the cigar, and are thus added to what are already there; and as the smoking is continued, and the heat approaches the upper part,

all these collected materials are evaporized, and thus in bulk carried into the system. Add to this the irritation from the heat, which is very great, the cigars being nearly always smoked until too hot to hold between the lips, and we readily see that cigars are by no means without disadvantages. We say nothing here of the many impurities which may find their way into the cigar, and be concealed under a nice wrapper, while they would readily be detected in tobacco prepared for a pipe. The last and most popular form,

especially among the young men of today, the form which has all the disadvantages already mentioned and others beside, with few of the advantages, is the Cigarette.

Cigarette-smoking is a comparatively new custom, having been introduced into this country within the last twelve or fifteen years by the French, who in turn learned it from the Spanish (?) But within these few years it has grown from an unknown, to, we may say, almost a universal custom.

It possesses, we say, all the dis-

advantages, with but few points to recommend it.
And first, the cigarette, being short, has no cooling or condensing surface interposed between the fire and the mouth, and hence not only do the volatilized principles find free access to the system, but the lips are constantly irritated and scorched by the heat.
In the second place, the same objection may be urged to the ready made cigarette, which we found to the cigar, viz: as their manufacture is not observed by the public, many impurities and adulterations are added to the tobacco. This is but

obviated by the smoker buying pipe-tobacco, which he can examine for himself, and rolling his cigarettes when he wants them. The third and great objection raised against cigarettes is that they are rolled in paper, which, this time, pretends to be "pure rice paper", but which nevertheless is bleached with arsenic. This is easily proved by subjecting some of the papers to Marsh's test, when we readily get the characteristic black mark on porcelain. Those who think they know, then say that this arsenic getting into the system in even such

small quantities, may cumulate, & thus give rise to symptoms of the most dangerous character; but we cant say we agree on this point, as there is very little probability of any such cumulation; but the arsenic would rather tend to act as a tonic.

We have extended this paper beyond the limits intended for it, but the subject is one of such vast scope that we have at last been compelled to leave out much that is important. We hope, however to be forgiven for this transgression upon your patience, but, as we are willing to "Render unto all

their dues", so we see tobacco accused of many things of which it is innocent; and while it is an agent fruitful of certain kinds of ill-effects, still many sins are laid to its charge, by those who seek something, behind which to hide their own ignorance.

Very Respectfully,
J. R. Jordan

Remittent Fever.

By

C. C. Winslow.

February 14th 1884

Baltimore

Maryland.

— Remittent Fever —

As the influence of the so called miasm upon the human system is a subject of general discussion among medical men at the present time, I will venture to give my limited views upon the subject. And select that part of the trouble known as Remittent fever, of which there may be two varieties, Viz: Simple and Malignant. The former will be the subject of discussion.

Symptoms. Although the

premonitory stage is usually short, and not unfrequently wanting, its general occurrence is well established, its symptoms are those of general malaise, with some headache, slight nausea, and furred tongue, these increase, until a chill, not violent, but lasting for some time, fairly begins the attack, or an ill-defined cold stage, with a feeling of chilliness, languor and debility, and perhaps cerebral oppression and gastric disorder, may occur, after this

The febrile condition is developed. The skin becomes hot, dry, and harsh; the pulse rises in force and frequency, the face is flushed, Headache is throbbing and severe; the faculties being unfitted for any mental exercise, Violent pain is almost always felt in the back, and very often in the limbs also. Epigastric uneasiness is nearly universal, Nausea and Vomiting extremely common, The bowels are costive; when opened, however, The stools are colored with

bile, The urinary secretion is scanty. Thirst is always great, cold drinks being much preferred, Respiration is hurried, althought free, After a continuance of these symptoms for several hours they begin to abate more or less, even without treatment, The feelings of the patient are more comfortable, he sleeps, and wakes with a skin less hot and moist, may even be in perspiration, Headache and some pain in the back are apt to remain, however, and the

pulse does not subside to the natural standard. The stomach, though, is less disturbed, and thirst not so intense. Mostly, in from six to twenty-four hours, the patients discomfort again increases. The skin becoming even hotter than before, and quite dry. The pulse rises again. Thirst is great, although sometimes less than the first paroxysm. The head ache returns, and with it usually severe pain in the back. The tongue is now thickly

furred, Nausea and disgust for food are again felt, and in a large number of cases Vomiting returns, the Stomach rejecting every thing, even cold water. The stools will be found to contain bile, Yellowness of the skin appears in a majority of cases, in various degrees.
The advance of the disease, after the second paroxysm, is exceedingly Various, but the periodical character is retained throughout the attack, The remission

may occur at any hour, but in protracted cases it usually occurs in the morning. The fever lasting through the night. Quite frequently a double tertian type is observed, the exacerbation occurring one day in the morning and the next in the afternoon, and sometimes with different degrees of violence

Causes. This is a question which has not yet been settled, though it is thought that the material cause

of malarial fevers is a minute vegetative organism, whose substance or emanations enter the body, such results, of course, require repeated investigation to make them actually matters of demonstration. Diagnosis, Yellow Fever has by some physicians regarded as identical with remittent, but the clinical history of the two troubles proves that they are specifically distinct diseases. When the typhoid state supervenes

there may exist very considerable similarity to true typhoid fever, and from this fact, some have grounded the opinion that they are not specifically different, and that typhoid fever is merely a protracted remittent of low form, But the mode of onset of the two troubles are entirely different, the typhoid. The symptoms are insidious and almost imperceptible at first, in remittent fever, after a day or two of malaise, a chill abruptly

When in the attack, Vomiting is extremely common in the one, and quite rare in the other, Epistaxis, Bronchitis and the rose-colored spots so common in Typhoid are rare in the Typhoid Intermittent, In fact the clinical history of the two diseases is so different that it clearly points to the fact that they are separate and distinct troubles.

Prognosis, Recovery may be anticipated in a majority of instances, Before

the use of Cinchona, Remittent was often quite fatal, Favorable signs are, the earlier occurrence and prolongation of the remission, and its becoming more and more complete, Moistening and clearing of the tongue, copious perspiration, &c, Unfavorable, of course, are, the shortening and postponement of the remission, and its indistinctness, Dryness and blackness of the tongue, Delirium or Suppression of the Urine - &c,

Treatment - In a person of robust constitution, if the headache is very severe, skin hot and the pulse full and rapid, it is common to administer a cathartic, some prefer a saline, while others like a mercurial as ~~Calomel~~ or blue pill, the ordinary Comp. Cathar. Pill is as good treatment, in my opinion, as can be employed in the beginning. Special treatment may often be called for by the great distress

of the stomach, Lime-water or magnesia will often relieve this difficulty, Sinapisms and pediluvia are of course great adjuvants, Ice will answer better to quench the thirst than water, As soon as the violence of the systemic excitement has been moderated, without waiting for its entire subjugation, if the pulse have begun to subside, and the headache is less intense, We begin with quinine, but it is

unnecessary to begin with large doses, unless some malignancy is suspected; Best to give in small doses. say from 2 gro to 5 gro. every 2 or 3 hours, until the remission. Then the dose may be increased if necessary. After two or three day of quininization, the amount usually may be diminished to eight or ten grs. distributed through the day, The treatment of complications must superadd modifications appropriate

to them, the slow convalescence, with deranged digestion, the daily administration for a few days of small doses of blue pill will generally do good. To improve the condition of the blood small doses of Iron combined with Quinine will act remarkably well, and make a valuable termination of the treatment, Arsenic may also sometimes be required,

A
Thesis on Typhoid Fever

Presented to the

Faculty
of the

Maryland University
of

Baltimore
by

Edward L. Miller

Typhoid Fever

The name typhoid signifies typhus like, the pertinency of this name consists in the resemblance of the disease to typhus fever, typhoid fever prevailes very extensively in this country and been known with us as common continued fever. There have been many other names for this fever but none other has been adopted, By the German writer the disease is called abdominal typhus, Prof Gu-B Wood, has suggested the name of enteric fever, Murchison has proposed as a substitute typhogenic fever, This name was introduced by Louis, as no one has generally been adopted, the disease probably will be continued to be called typhoid fever.

Anatomical Character, Typhoid

Fever has certain special lesions, which are highly interesting and important which are situated in the peyerian and solitary glands. the changes which are characteristic of the fever are thickening, softening, and ulceration of glands, Enlargement, softening and ulceration of mesenteric glands and especially those corresponding with the morbid patches of intestine. Among others which may be affected is the jejunum. duodenum: pyloric end of the stomach, other lesions met with are ulceration of the pharynx, epiglottis cartilage, softening of the spleen, sometimes of the liver, and kidneys, hepatisation of the lungs, softening of the heart,

and sometimes inflammation of the meninges of the brain with effusion. The first step in the change of the abdominal lesions is sloughing away of the glands and mucous membaine. the next step is ulceration, the ulceration may extend to the muscular coat and also to the peritoneal sac. and may set up peritonitis by discharging the contents of the intestines into the peritoneum, this is one source of peritonitis and an-other is from the mesenteric glands when they become affected they are sometimes absorbed and sometimes they become, as large as a pigeon egg and are either absorbed or burst, and discharge into the peritoneum and set up peritonitis. Usually the patches of the intestine are

indurated to the touch, they are sometimes smooth, and sometimes present an irregular granulated, aspect. the glands nearest the caecum are first affected and pass successively upwards. sometimes the glands of the large intestine is exclusively affected, and the small intestine is unaffected, as regards the sloughing the rapidity of the sloughing there is a variation in different cases to the time ulceration is a consequence of the sloughing, after the sloughing is completed ulcers take the place of the peyerian and solitary glands The ulcers first occurs in the glands nearest the caecum, and successively in the ascending series. ulceration in the lowest gland rarely take place before the end of the second week, of the

disease. but exceptionally it may occur during the first week. Generally the uppermost glands do not become the seat of ulcer~~s~~ until the third week or even later. the occurrence successively, of ulceration in the gland from below upward is one of the distinctive features of the disease.

Cicatrization is the last step in the series of processes, a thin serous like membrane is formed at the bottom of the ulcers, this membrane gradually becomes thicker and firmer and at length the excavations produced by the sloughing away of the glands, are filled up. It is not probable that the glands are reproduced, the process of cicatrization usually begins

in the third week of the disease, and is going on during convalescence, the time occupied in the completion of this process varies in different cases it is sometimes slow a fact which accounts for the persistence of the abdominal symptoms in certain cases for sometime after the career of the fever is ended. Perforation of the intestine is liable to occur in one or more of the ulcers, it may be due to an extension of the ulceration to the muscular and peritoneal tunics, to sloughing of these tunics or to rupture. The opening is sometimes extremely small, if due to ulceration it may not be larger than a pin ~~point~~, if caused by sloughing or by rupture, the opening may

be of considerable size. and set up acute peritonitis The foregoing list is peculiar to typhoid fever, in a greater or less degree they are always present and they occur in no other disease they are characteristic of typhoid fever

Clinical History, Typhoid Fever as a rule is developed gradually, the time occupied in its development is considered by some as a precursory or prodromic period and as a stage of the disease. the disease in some rare cases is abrupt the Patient takes to the bed at once. Symptoms, there is a sense of weariness, languor, and general uneasiness, slight headache on rising in the morning, dulness of intellect, irregular flushes of heat,

or chilliness, slight acceleration of pulse, furred tongue, and a disposition to diarrhea, these symptoms may last from several days to a week or more after which the disease is established by the occurrence of a chill, followed by the ordinary phenomena of fever. the disease being fairly established, there is increased frequency of pulse, ranging from 90, to 110, or 120, and a rise of temperature, as the disease advances these symptoms become aggravated, the pulse is more frequent and strong the skin hot and dry, the tongue dries and becomes red at the tip and edges, there is pain in the right iliac region with a gurgling sound upon pressure, tympanitis is also present, also restlessness and insomnia,

Epistaxis, and yellow watery diarrhea, loss of appetite. occasional nausea and slight vomiting. after considering the forming stage, it would be appreate to consider the anatomical systems to which they are referable. they are the countenance or general aspect, the nervous system, the digestive system, the skin, the respiratory system, the circulation, and the urinary system.

Countenanc and General aspect. There is no very marked alteration of the countenance for the first few days, the face in the early period of the disease is usually more or less flushed, afterwards the countinance presents a dull or listless expression or an appearance of stupidity, In some rare cases there is circumscribed

redness of the cheeks but it is a sign of complication with pneumonia.
Nervous System. Pain in the head is more or less complained of during the first week, it is not always a prominant symptom and never has the intensity which belong to the pain in the first stage of acute meningitis, it gradually become a subject of less and less complaint as the disease advances. Pain in the back is complained of in the early part of the disease but is rarely a prominent symptom, Delirium is manifested in some of the cases but not always, as a rule it is not manifested until the second week and later, but sometimes Patients have it in the begining of the disease when the Patient

takes to bed, Patients are sometimes perfectly coherent, but not rational in some Patients there is a state of typho mania, other symptoms referable to the nervous system, or ataxic symptoms, developing gravity of disease, are grasping at invisible objects or carphologia, pulling up of the bedclothes or fumbling with the body linen, visible twitching of the muscles of the face and of the extremities, and movements of the tendons of the wrist perceptible to the touch, the latter called subsultus tendinum

Digestive system, Anorexia is the rule, but to this rule there are exceptions, the appetite is sometimes preserved throughout the disease, Food

is sometimes acceptable when, owing to the mental condition it is not asked for. Thirst is usually a prominent symptom until perception becomes blunted, Drink although not asked for, is often taken with avidity when given. The tongue may be simply furred or frosted but is oftener covered with a coating more or less thick, which in different cases, is whitish yellowish or brownish, or even black. not infrequently the coating are thrown off once or repeatedly. and the surface is than usually reddened it sometimes becomes dry and hard, the tongue in some cases at an advanced period, is protruded with apparent

hesitation and difficulty, and when protuded, may not be withdrawn, apparently from forgetfulness. Dark or black matter, called sordes after the first week, is apt to collect upon the teeth and lips, especially in grave cases. hemorrhage from the gums is an occasional symptom, occurring in mild as well as in severe cases. redness of gums and bleeding on slight pressure are common. Diarrhea or looseness of the bowels exists in a large majority of cases, and belongs among the diagnostic symptoms of the disease other abdominal symptoms are Meteorism or tympanitis tenderness or pain on pressure, and gurgling, the abdomen is always resonant from the presence of

intestinal gas. frequently there is more or less distension and sometimes the tympanitic enlargement is great. Tenderness or pressure in the iliac region, especially on the right side is very rarely entirely absent. Perforation of the small or, in rare instances the large intestine occurs in a certain proportion of cases it occurs late in the disease or during convalescence, and sometimes even after apparent recovery from fever.

Skin. Of the symptoms referable to the skin, the most important is characteristic eruption. The eruption consists of isolated papules, generally limited to the trunk, of a rose or pink color called by Louis,

lenticular rose colored spots, they are slightly elevated, and therefore are papular, the elevation is distinctly felt if the finger be slightly passed over them the redness momentarily disappears on light pressure. The number of papules is generally small, in the majority of cases not exceeding fifteen or twenty, and sometimes only four or five can be discovered, the papules continue to disappear and appear during the career of the disease. The eruption is not always present, it is often wanting. Perspiration more or less abundant, and recurring more or less frequently, is observed in about one half of the cases, it is most apt to occure at night.

as a rule, during the greater part of the career of the fever, the skin is hot and dry, Gangrene is apt to occur in situations exposed to pressure, the liability to bed sores on the nates, hips, and shoulders is to be borne in mind. this may be prevented by changing from time to time the position of the body.

Respiratory System, — Cough is not a prominant symptom, unless some unusual pulmonary complication exists, but slight or moderate cough is almost invariably present, Pneumonitis is a not infrequent complication, this complication is rendered probable by prominence of cough and accelerated breathing. Epistaxis has been

mentioned as a symptom of diagnostic value in the forming stage, generally the hemorrhage is small, but occasionally it is profuse, and it may even require to be arrested by mechanical means.

Circulation and Temperature.

More or less acceleration of the pulse belong to the history of the disease, the acceleration varies considerable in different cases, and at different periods of the disease, in the same case. The danger is usually considerable if the pulse exceed 120 per minute, and the pulse may rise still higher, and on the other hand it may fall below the standard of health, it has been observed to fall as low as 60, 40, and still lower.

the frequency of the pulse may vary at different periods of the day.
More or less of increase of heat of the body is invariable. The rule is that during the greater part or the whole of the career of the disease the temperature is raised, is without any exceptions but, under certain circumstances, the heat may not exceed, and it may even fall below, the standard of health. in general the thermometer in the axilla shows a daily increase of the temperature for the first five or six days. at the end of this period the temperature at least rises to 103° Fahr and, during the progress of the disease, if the temperature show an increase much above

this, the prognosis is unfavorable. During the progress of the disease there is, as a rule, an oscillation of temperature between morning and evening a high elevation of temperature in the morning, via 106° 108° indicates the approach of death, there may be a sudden and considerable fall of temperature other symptoms not denoting convalescence or improvements, is unfavorable. it may be the forerunner of some grave symptom, this has been observed to precede hemorrhage from the bowles.

Urine.— The urine is usually scanty and of high specific gravity until the approach of convalescence, when

it becomes abundant and of a low specific gravity, during the progress of the disease, as a rule the urea + uric acid are absolutely increased, the coloring matter is also more abundant than in health, the presence of albumen during a portion of the febrile career is not very uncommon. Renal casts in the urine are sometimes observed, these denote disease of the kidneys, either existing prior to the fever, or developed as a complication. If with or without renal casts or albuminuria the urine be notably deficient in urea, uræmia is to be apprehended. The urine is sometimes retained in cases of typhoid fever, and owing to the blunted perception, the bladder may become greatly distended. Convalescence.—

it is difficult to find any circumstance which will answer equally well to denote the date of convalescence, the career of the fever rarely ends abruptly. the termination in convalescence, like the development is gradual, for in some the disease may belonger, developing its self before taking to bed. and again in some the attack may be harder. Relapses of typhoid fever are sometimes observed, a return of the fever may take place after ten days or a fortnight from the date of convalescence, and the Patient pass through a second career. there may be many more complications associated with typhoid fever than what have been mentioned, death may be from inanition but in many cases nutrition becomes active after recovery. and the Patient attains,

to a greater weight than ever before, the mental powers in some cases are enfeebled for a considerable period.

Causation.— Typhoid Fever is not restricted within any geographical limits, it is endemic in every quarter of the globe, in certain of the so called Malarious districts it is not observed, as distinct from remitting fever, but there is reason to believe that in these districts, it is obscured by being blended with periodical fever. as regards the seasons of the year it shows a decided predilection for the autumn. it is stated that a warm dry summer favors the occurrence of the disease in the following autumn. A decided predisposing influence pertains to age. young persons are chiefly liable to it, it occurs but rarely in

infancy it is not uncommon in child-
hood, a considerable proportion of the cases
of socalled infantile remitting fever are
cases of typhoid fever, it is rare after
fifty years of age, Both sexes appear
to be equally liable to the disease, no
causative influences relating to social
position, occupation, or habits of life have
been ascertained, with respect to the con-
tagenousness of the disease, it may be
communicated under certain circumstan-
ces is certain, and that it frequently or
generally originates spontaneously, that is
irrespective of contagion or infection, is per-
haps equally certain. This is one of the
diseases the special cause of which may
be generated without the body and rep-
roduced within the body, it is certain

that there is a virus in the intestinal discharges, and that it may be conveyed in the water drank. The belief is that the disease invariably proceeds from a special virus contained in the excreta, and the prevalence of the disease by the dissemination of the virus in emanation from water closets, privies, and drains. As a rule it is not communicated to those who come into contact with private Patients, nor is it propagated among hospital Patients. thus differing widely from typhus fever. and there has been some striking outbreaks of typhoid fever in localities in which it appeared to be fairly attributable to emanation from obstructed drains and cesspools, or from drinking water

tainted with sewage.

Diagnosis.— The points in the clinical history which are distinctive of typhoid fever are as follows, the gradual development, the absence of marked remissions, the abdominal symptoms, viz., diarrhoea with ocher colored dejections, tympanitis, tenderness in the iliac regions, and gurgling the occurrence of epistaxis and the characteristic eruption, as regards the eruption, a fact important to be borne in mind is that rose colored papules like those belonging to the history of typhoid fever, are sometimes found in other affections. other points to be taken into account are, the autumnal season, and the youth of the Patients. the fore-

going points, taken in connections with the absence of features distinctive of other fevers, generally render the discrimination easy; after a certain duration of the disease, the discrimination is not always easy, and some delay may be necessary in order to arrive at a positive diagnosis. the local affections with which typhoid fever is liable to be confounded are, meningitis, Bronchitis, Pneumonitis, acute tuberculosis, and enteritis, acute meningitis, as distinguished from typhoid fever, is characterized by more intense cephalalgia, by intolerance of light and sound, early and active delirium. there is generally constipation, the abdomen is not tympanitic but frequently depressed the iliac tenderness is

wanting, subacute bronchitis is an element of typhoid fever. if the bronchitis be unusually prominent and the fever unusually mild, the latter may be overlooked and the disease considered a primary bronchitis this error can only happen in the early part of the fever, the duration and progressive increase of the disease, together with the characteristic events of the fever will lead to a correction of the diagnosis, Typhoid Fever may be confounded with pneumonitis, when the latter exists as a complication. The existence of pneumonitis is shown by its physical signs. The differential diagnosis is to be based on facts which show the existence of the fever prior to the occurrence of the pneumonitis and on the events characteristic of typhoid fever, viz the abdominal

symptoms and eruption, cases of primary pneumonitis, in which the existence of typhoid fever may be suspected, are cases of so called typhoid pneumonitis, that is pneumonitis with phenomena denoting the typhoid state, viz. low delirium prostration, subsultus tendinum, &c. Acute Tuberculosis has not infrequently been mistaken for typhoid fever, the former is to be discriminated by notable frequency of respiration, the prominence of the cough, the occurence of haemoptysis in some cases, the abundance of subcrepitant rales, by marked lividity in some cases and by the absence of the abdominal and other characteristic events of typhoid fever. Typhoid Fever may be considered as primary enteritis when the abdominal,

symptoms are unusually prominent from the beginning. The liability to this error is chiefly in children, events other than the abdominal ~~symptoms~~ symptoms belonging to the history of typhoid fever are to be sought after. There are cases of typhoid fever which may be overlooked in consequence of the febrile phenomena being imperfectly developed. These cases now referred to are called cases of latent typhoid fever or the term walking cases. The patients do not take to the bed, and perhaps, they continue their usual avocations. They complain only of debility loss of appetite, and mild diarrhea. under these circumstances death sometimes takes place from intestinal perforation profuse hemorrhage or some grave complications, and on post mortem examination, the characteristic typhoid lesions are found.

Prognosis. In the many statistics show considerable variations in the death rate, in different places and periods. The variation is often considerable at different seasons in the same place, and under similar circumstances as regards surrounding and treatment, there is a greater mortality in the cold than in the warm months and vigorous persons are more likely to succumb than those of feeble constitution. A fatal result is rarely due to the intensity of the disease, death, generally, is attributable to complication or accidents, such as pneumonia, peritonitis, and occasionally hemorrhage, pre-existing disease may lead to a fatal result, for example, chronic disease of the kidneys, unusual severity of the abdominal lesions is sometimes the cause of death, coma, probably uræmic in most cases,

and convulsions render the prognosis extremely unfavorable. Other marked ataxic symptoms, such as carphologia, subsultus, etc are ominous. cases characterized by active persistence delirium usually end fatally. The prognosis is unfavorable whenever the pulse becomes extremely frequent and feeble, Great prostration is evidence of great danger. In cases of pregnancy, abortion generally takes place, and death follows. intestinal hemorrhage is less serious than has been supposed. recovery takes place in the majority of cases, in which this event occurs. Death may be caused by gangrene or bed sores in parts exposed to continual pressure from the weight of the body, a considerable and sudden fall of the temperature below the minimum of health is extremely

ominous. a favorable prognosis may be entertained so long as ataxic symptoms are not marked and the asthenia not great the pulse not very frequent or feeble, and there are no serious complications but, under these circumstances, the prognosis should always be guarded in view of the liability at any period of the disease to serious complications or accidents, and it is to be borne in mind that sudden coma and perforation of intestine are not less liable to occur in mild than in severe cases. The liability to perforation during convalescence is to be recollected, on the other hand recovery may be hoped for in cases in which the symptoms, denote the utmost gravity.

Treatment. — There are three important factors belonging to the treatment of

typhoid fever, viz. Hygienic Dietetic, and medical. The first and most important is hygiene, plenty of fresh air, the sick room well ventilated, cleanliness, and regulation of temperature which should not be allowed to rise above 60° Fahr, changing frequently the position of the body is very important, the evacuations should always be instantly removed. When practicable it is advisable that the bed and body linen should be changed daily. Alimentation It is desirable for the Patient to take as much nutritious food as will be digested and assimilated, in nutrition in cases of fever, as of other affections, enhances and adds to the morbid phenomena belonging to the disease. In the early part of

the disease there is generally repugnance of food, and afterward, owing to the mental state and the condition of the mouth, taste and appetite are wanting. Under the latter circumstances food is to be given although not desired by the Patient, and even when he is disinclined to take it. The indifference to food may proceed, measurably, from an unwillingness to make any exertion. The supporting diet should be in a liquid form, and embracing the necessary variety of alimentary principles. The animal broths or essences, eggs and milk, with the addition of some farinaceous form of food, fulfil these requirements. Different articles should be given in alternative and regular intervals, the intervals should be from two to

four hours not any offense, and not too much an amount at a time, for giving it in too large amount might cause the Patient to vomit, and make matters worse. And if the Patient desire or has a choice for particular kind of food, it should be given as far as practicable, Medical treatment the first is to the condition of the Patient, as regards the temperature. Sponging the body with cold or tepid water, as accessory to the use of cold water there are certain remedies which are useful by diminishing the temperature of the body, namely Quinine Digitalis and veratrum viride, The two latter diminish at the same time, the frequency of the hearts action, and, of the two, the veratrum viride has especially this effect, Quinine

given as an antipyretic should be given in large doses 10 to 25 grains at a dose so as to get the full effects of the Quinine at once Calomel is of value in the treatment of typhoid fever but must be given in such doses as will not bring on Ptyalism.
If there is costiveness give a mild cathartic, such as Castor Oil, give Dovers Powder at night in doses of from 5 to 10 grains, when there is restlessness the Bromides are of value especially the Bromide Potash, Turbentine has a curative effect and is called for when there is a dry tongue, and the abdominal distension are marked. When there is much delirium give Opii in full dose, if it does good keep it up, but if it increases the delirium withdraw the drug. Give cool drinks such

as ice water or lemonade, in moderate quantities not so as to cumode the stomach, apply ice to the head when there is much cephalalgia. The supporting measures, give stimulations as Wine, Brandy, Egg nog, Wine Whey. The diarrhea may require to be restrained, for this give Opiates and Astringents either by the mouth or rectum. Mere looseness of the evacuations without undue frequency does not call for treatment. During convalescence, alcoholic stimulants should always be given moderately, frequently small liquors or light wine are best suited to convalescence, solid food should be allowed as soon as convalescence is declared, the diet should be of plain, and wholsome well cooked. The complications will be treated

as they occur.

Thesis on
"Diphtheria,"
by
Geo. J. Ackert
University of Wooster
Session 1883-84.

Diphtheria.

Definition:

Diphtheria is an epidemic, sometimes contagious disorder, of which the most characteristic phenomena consist in the formation of whitish membranous pellicles on certain mucous surfaces, more especially those of the fauces, nares, larynx and trachea, and on excoriated or wounded areas of the skin; the rapid development of anæmia and extreme debility; the affection during

or called a parent convalescence of temporary paralysis.

History:

Diphtheria has only been known by its present name since the year 1826, when it was so designated by Bretonneau from the Greek word διφθερα, a skin. Although this is the first use of the disease under its present name, yet we recognize the same disease from the description of many of the ancients for many centuries back. Bretonneau described it as a

disease of Egypt, also Macoptin, and Coelius Aurelianus among the Romans. Hecker mentions it as occurring in Holland in the [illegible] 1837; Carnivale at Naples 1620; Tamayo, at Madrid, 1622; Ghisi, at Cremona, 1740, Morand saw it in France in 1743-4; Fothergill, in England, 1764; in this country Douglas of Boston in 1736; and Samuel Bard of New York in 1771. Hence we see that it is a disease of all climes and nations as it is of all times and seasons. It is generally seen in the epidemic form rarely in the sporadic. It affects both

ren and adults, but it far more fatal to the former. There has been very little of diphtheria in this country before the year 1858, at which time it seems to have been imported from France, which if true, is an argument in favor of its contagiousness. That it sometimes and often is imparted from one person to another is an undeniable fact but the simultaneous outbreak of this disease over a large area of country can not be explained this way, and can only be accounted for by recognizing its epidemic nature. Bretonneau approved Washington

and the Empress Eugenie to have died of Diphtheria. Stephanie, the beautiful queen of Portugal, and Princess Alice of Hesse were also among its distinguished victims.

Causation:

Since Diphtheria is a communicable disease it must be produced by some specific poison, the exact nature of which is not known. The medical opinion of the day strongly favors the bacterian origin of this disease, as of almost all other diseases. Its peculiarities seem to hold the exalted position of the Scarlet-

part of Cuba, in which [illegible] was formerly almost exclusively accredited to the liver. I will say something more on this subject when we come to speak of the exudation. Virilis who favor the contagious origin of the disease, believing, to have established, that the most common cause of death is contact with something derived from a previous case of the disease; this is probably true of the isolated cases, but not true in the general epidemic form of the disease. The sanitary condition of towns or localities and the condition

of health of those above
referred has much to do with
its development, but in our
present state of knowledge
we have to confess that
little or nothing is known
of the true cause of the
disease. It occurs during
the course of measles,
Small Pox, Typhus, Puerperal
fever, Scarlatina ect. and it
seems that these conditions
especially favor its
development.

Morbid Anatomy and Pathology:

The Morbid Anatomy of Diphtheria is almost limited to the circumscribed inflammations found on the

fauces and adjacent parts
The affected parts
first hyperaemic and
then they become infiltrated
with Leucocytes and other
inflamatory material, and
when the inflamation ex-
tends more deeply, extra-
vasations of blood occur ter-
minating in distinct abscess.
The inflam of surface se-
cretes a thin mucus, and
soon a delicate pseudo-mem-
brane forms in situ.
This thickens by additions
to its under surface and
edges. This membrane is at-
tached to the subjacent mucous
membrane by general adhesion
or, from gangrenous extending

into the mucous follicles. Many low vegetable organisms such as micrococci, bacteria and the like have been detected in the exudates of diphtheria, and have been thought by many to be pathogenic. Among the chief supporters of this theory are Orth, Löffler, Talmon and others, who assert that they have found a special form of "micro-beast" which, in their judgement is causative or pathogenic of the disease. But I think this question is yet sub-judice, for other competent observers have failed to find "diphtheritic

bacteria in well marked cases of the disease and have succeeded in finding them in cases that were not diphtheritic. This of itself seems to me to be sufficient proof that the disease is not caused by these low organisms. That bacteria and the like are found in diphtheria as in many other diseases I do not question at all, but that they are invariably present, or that they are in any way necessary to the production or development of diphtheria I think highly improbable. It is my opinion that the diphtheritic exudation may

bone is suitable medium for these bacteria, bacilli cocci or what not to multiply and grow in.

Some changes take place in different parts and organs of the body. The lymphatics of the neck are enlarged and tender. The changes which occur in the lung in bad cases is probably due to mechanical obstruction to the bronchi except when the lung tissue itself is involved. The most important changes occur in the kidneys. In severe cases they are swollen, intensely hyperemic or they may be enlarged

and brain. and on microscopic examination may present fatty or granular or fatty deposits in the renal tubules with hyaline casts. & in all cases changes occur in the malpighian tufts and tubules. The tufts are hyperaemic and filled with micrococci, the epithelium of the tubules is cloudy granular and thickened, and is often detached in the form of casts. The brain is said to be hyperaemic. Changes occur in the spinal nerve roots and are interesting from the fact that they may possibly explain the

paralyses that occur are concomitant symptoms and sequellae of the disease. They are [illegible], with extravasations of blood occurring in their sheaths and [illegible] are also filled with lymph cells and nuclei. The blood is said to be modified in character but certainly not always.

Symptoms and Progress:

Diphtheria may be either simple, croupous or malignant. The [illegible] is not accurately known. As a general rule the symptoms that ensue

[illegible]
its violence.
For the simple form the patient complains of general malaise and slight sore throat. On examination the lymphatic glands behind the jaw will be found enlarged and somewhat tender, looking in the mouth the tonsils are seen red and swollen, the mucous membrane of the palate and fauces red and oedematous. There is generally slight fever with furred tongue, constipated bowels etc. Then from one to three days after this is formed a deposit of false membrane of a white or

diphtheritic patch either on one of both tonsils and spread in other parts of the throat. These symptoms will continue about the same, if no complications arise, until about the ninth or tenth day when the false membrane will begin to peel off and convalescence follows. The croupous variety, while it is not as fatal perhaps as the malignant, yet it has killed more persons, especially children, than any other form of the disease. About the same general symptoms may usher in this form as the mild, or there may be greater fever

distinctness from the
An increase of discomfort in
the throat is complained of.
There can be abundant leathery
exudation makes its appearance
on the tonsils, which
are very much swollen, this
binds rapidly to spread and
thicken, and soon covers the
palate, fauces, uvula etc.
Pronounced debility occurs
quite early in the attack,
in fact, more or less debility
is a characteristic of all the
forms of Diphtheria and
furnishes an important
indication for treatment.
Soon the membrane extends
into the larynx, which will
be recognized by the voice

becoming hoarse and husky, then reduced to a whisper; and by the characteristic croupous cough and difficulty of breathing.
This constitutes the so called Laryngeal Diphtheria even when the larynx alone is affected as it sometimes the case. It is only in this variety that Diphtheria is and can be confounded with croup for it is only when Diphtheria assumes this latter form that it presents any of the characteristic symptoms of croup at all.
As I am a non-believer in Mucin identity it may be

we will now tell you some of the principal points of difference between these two diseases.

Diphtheria is an infectious disease while croup is not. Diphtheria attacks irrespective of age, croup is confined to children. Diphtheria is markedly contagious, croup generally sporadic; albumen often present in the urine of a diphtheritic patient, rare even in uncomplicated croup. Croup occupies the larynx exclusively while the pharynx is the usual seat of diphtheritic exudation. Diphtheria is pre-eminently a constitutional affection. Croup, on the

other hand, is known as
one En Croup. The exudation
is on and does not extend
into the follicles of the
mucous membrane as it
generally does in diphtheria
and finally the absorption
of septic material and
systemic poisoning never
results from Croup.
In the croupous form
the false membrane will con-
tinue to extend downward
into the trachea and bronchi
and the breathing will become
labored until the child
dies from asphyxia. On
the other hand, neuro-paralysis
may lead to death

this takes place.
In regards to all that has been
to Diphtheria we have no
certainty about the fever
which may be called the "diphtheria
fever" for want of a better term
to express it.
In the malignant form of
the disease with the symptoms
are increased in severity and
intensified from the beginning
of the attack. A distinct "chill
or rigor" will generally usher
in the attack, followed by se-
vere headache, very soon
a yellow, brown or almost
black "false membrane" covers
the mucous membrane of
nearly the whole throat. This
tends to spread rapidly, epi-

nose with the nares which give forth a fetid odor and produce an ichorous, acrid discharge which excoriates the upper lip as it runs over it, down into the larynx and trachea & the bronchi and lungs and sometimes into the oesophagus and stomach. The neck and throat are enormously swollen, the neighboring glands enlarged and swollen. In the meanwhile extreme debility has set in, the pulse is tiny and dicrotic in character and finally death supervenes from the gradual or sudden cessation of the heart's action if this end has not been accomplished

by asphyxia.

Special Symptoms and Complications:

Albuminuria is present in most of the severe cases. Paralysis of the palate muscles is sometimes a concomitant symptom. The "false membrane" of diphtheria often makes its appearance on any denuded surface of the skin. I have had a remarkable instance of this in the person of a little girl who had a very extensive burn leaving a large raw surface, soon after this she was attacked with diphtheria and the whole denuded surface of the burn was covered by

fauces membrane, there is a peculiar fetid odor emanating from diphtheria patients which, though scarcely ever mentioned by the books is almost pathognomonic; at least a physician accustomed to diphtheria can very often diagnose it the room by its odor alone.

Sequellae:

Anaemia and general debility are apt to persist some time after convalescence has been established, death by dyspnoea has taken place from this cause, numerous paralysis appearing

the voluntary and involuntary muscles are often involved as sequellae of the disease. It affects both the motor and sensory nerves. The paralysis occurring as concomitant symptoms usually affect the muscles of deglutition. There is at first some difficulty in swallowing and then a regurgitation of fluids through the nose, followed by a complete inability to swallow. When this complication occurs we notice that the heart's force is considerably reduced by interference with its motor apparatus. The paralysis following diphtheria are temporary and functional i.e. they are not dependent upon any organic lesion.

Treatment:

The treatment of Diphtheria has long been a matter of great doubt. This is due in part, I think, to the general gravity of the disease, and in part to the different views of the profession as regards its nature in and bear.
For instance those writers in the local nature of the disease have directed all their remedies to the local manifestations of the disease and have instituted constitutional measures incidentally. On the other hand, those

that Diphtheria is primarily and entirely a constitutional disorder have directed their remedies accordingly, and have almost ignored its local manifestations. As for myself, I am not willing to adopt the letter of these extremes; although I believe as I have said before Diphtheria to be purely constitutional in its nature, origin and course. In my limited observations of this disease I have noted one thing that in proportion as Diphtheria has been treated and believed by the

Professor to be a constitutional disease, yet in that proportion has its mortality decreased and vice versa. It would be totally out of place in a paper of this kind for me to attempt to give a list of the remedies that have been proposed for the treat of this disease, for it seems to have been as care equaled by the articles in the Materia Medica itself. So I will be content in mentioning a few drugs and relaxing upon a line of treatment which I have known to be almost universally effectual in

the cure of this dreadful disease.
First we will take the constitutional treatment, as it is of prime importance. When called to a case early before the disease has fully established itself, & would commence the treatment by a mercurial purge, say gr x of Calomel if the bowels were costive, if not, or if the case promised to be one of unusual severity & would not wait for the slow action of the mercurial, but institute the following treatment immediately viz, & would put the patient on Qr

doses of Quinia to be administered every two hours with 15 grs Chlor. Potas, and 15 drops Tr Chlor. Ferri in combination. Furthermore if the disease seems to be decidedly of an asthenic type, I would order a sufficient quantity of the best whisky with such nourishment as the patient could take in the intervals. This stimulation and this nutritious food is regarded as of the greatest importance, for the disease is so debilitating in its nature. I think a little Bichloride Mercury might

he added that the above
were good results.
Locally I would do nothing
unless it were called for
either from the false
membrane encroaching
upon the air passages
and impeding respiration,
or from its taking on morbid
processes which might
lead to septic &c.
Then I would order the
following to be used in
the spray or steam ap-
pliance, viz. lime water ℥i
Carbolic acid gr. iii, or
Lime water ℥i, 1 to 8, lactic acid
℥i. Either of these may be
used every hour, provi-
ded the necessities of the

case demand it. Therefore all times sustain your position in every possible way. With this brief outline I bring this crude and imperfect thesis to a close, fully recognizing its manifold errors and imperfections & respectfully submit it to my superiors, hoping that they will be, at least lenient in their criticism, remembering it is the first attempt of a young man.

Very respectfully,
Jno. T. LeCato.

[illegible]

[illegible] of the [illegible] is [illegible] fever caused by malaria and characterized by complete intermissions between the paroxysms.

Varieties. The varieties are quotidian or [illegible] paroxysms occur daily, tertian when every other day; quartan when on the first and fourth days, sextan, septan and octan; and besides these we have a double quotidian where we have two paroxysms in one day, a double tertian where we have two paroxysms in two days, alternate paroxysms corresponding in time and [illegible] [illegible] due to

[illegible] [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible]

distinct stages in the course, the
first one the sweating stage. There
appears to be [illegible]
[illegible] of chill
[illegible] in each case. The fever
is generally of remittent
type, suffused surface, high
[illegible] headache and
and general pains. In common
[illegible] that [illegible] stages are
all well marked, it will generally
[illegible] as follows of the main
[illegible]
[illegible]
[illegible] the
the cold stage, which commences

creeping sensations for a few
days while in other there is chat
tering of teeth and tremulous move
ments [illegible] and
in some cases is limited to
a few [illegible]
neck or extremities. [illegible]
[illegible]
[illegible]
[illegible]
[illegible]

[illegible]

[illegible] exposed [illegible]

[illegible] This is generally [illegible]

[illegible] head and [illegible]. The [illegible]

[illegible] two legs [illegible]

[illegible] or so, but the average is

[illegible] way [illegible]

quarters of an hour. [illegible]

[illegible] into the hot stage [illegible]

[illegible] quickly, [illegible]

[illegible] away to the [illegible], but

[illegible] [illegible] [illegible]

The cold stage is frequent, and
[illegible]
[illegible]
[illegible]
organs and the first stage as
there is less blood in the ves-
sels of the surface and the
whole amount of blood is not
diminished

The hot stage — is remarkable, only
more or less intense pyrexia. It
generally comes on by warmth grad-
ually succeeding the shivering
[illegible]
[illegible]
[illegible]

[illegible]
rapid, the urine is of a darker
color and of higher specific gravity
and there is generally much
thirst. There may be delirium
and convulsions in children. The
duration of the stage is quite va-
riable but it is [illegible] or
eight hours or even more. The
peripheral vessels now, instead of
being contracted as before are
[illegible]
then succeeded by the <u>paralytic</u>
<u>stage</u>. The change here be is
[illegible]
[illegible]
that eliminates somewhat [illegible]

[illegible]

[illegible]

[illegible] The whole process may [illegible] sometimes in an hour or two while at others it may be prolonged to [illegible] a period [illegible] days [illegible] does not elapse and [illegible] have a short [illegible] sweating stage [illegible] short or protracted. The first [illegible] the [illegible]

[illegible] periodicity of [illegible] gentle [illegible] but [illegible] [illegible] time. The period from the beginning of one attack to the be[illegible] [illegible] is called the [illegible] interval is the basis of the division into varieties, [illegible] of the disease. The paroxysms [illegible] occur [illegible] daily [illegible] at midnight. Quotidians and tertians were more likely to occur [illegible] the morning, while the quotidians [illegible] occur [illegible]

the afternoon. Sometimes the paroxysm occurs at the same hour each day, but [illegible] successive one occurs earlier [illegible] the [illegible] and [illegible] will be tripling [illegible] are retarding when each successive paroxysm is delayed. The tripling is generally a bad indication while the retarding is a good one. During the intermission [illegible] complain of nothing except a certain amount of weakness, the appetite is good [illegible] there is [illegible] time [illegible]

[illegible] while [illegible]
is great prostration, the appetite
and digestion are bad and va-
rious disturbances exist. Occasion-
ally we have the spleen enlarged,
[illegible]
a minor malady. It is the brown
or the aqueous coke. No pathological con-
nection with the disease is as yet
established, it [illegible] on
[illegible] the spleen. The
disease is cured. Anæmia is nearly
always present in this disease
especially when it is prolonged.
The pulse [illegible] the pulse [illegible]
called with [illegible]

[illegible] is the characteristic facies. It sometimes have general eruption of the disease but more often are a sequel. We often have an herpetic eruption around the mouth also with or just after the disease. The duration of the disease in the paroxysms is variable, it frequently ends spontaneously in a few days but it is generally [illegible] it is not arrested by treatment. It is in great [illegible] to recurrence, in some cases successive attacks occur regularly after a certain period. It magnesia in combina

tion with various other diseases making it very irregular and interfering with the functions. In malarious districts the malarial influence is apt to pervade all affections, and therefore demands special attention. Paroxysms of neuralgia [illegible] at times [illegible] the fever [illegible] with the same regularity as in the [illegible] regular fever. In this case a cure is made by remedies used in intermittent fever.

Causation. This is a morbid agent known as malaria. Evidence of this is inferred from

its peculiar [illegible] to
tion to certain localities called ma
[illegible] [illegible] [illegible]
to explain [illegible] [illegible] [illegible]
localities [illegible] [illegible] [illegible]
[illegible] this is required for its fo
duction [illegible] [illegible]
not that [illegible] certain districts
to a considerable [illegible] [illegible]
and yet the disease is not found
[illegible] [illegible] generally that
malaria is not confined to
marshy districts. It is said that
it follows more abundantly when
a dry spell of weather follows a
wet spell and that burning
up the soil produces it also.

But after cultivation of the soil for several years it will often disappear. Thus a [illegible] comes a more clearer [illegible] blind to [illegible] and persons sleeping upstairs [illegible] while their [illegible] will attract the [illegible] its influence. It is more [illegible] that it [illegible] the [illegible] days and thus the disease may be avoided by [illegible] exposed to the night air. This fever is not at all communicable from one person to another but is purely miasmatic. Salisbury claimed to have demonstra

ted the special cause of it to be a species of plant; but other observers have not confirmed this conclusion and further proofs are needed before it is established that a particular vegetable organism is the cause. The period of incubation is variable, may only be a few days or weeks but may be prolonged to months and even years. An attack is likely to appear after pressure to cold or over exertion. Attacks occur more frequently in the spring and autumn. This is in favor of a vegetable. An attack is sometimes brought out by going from a warm

to a nonmalarial region. I had
there brought on myself one
in this way. I was seized
a malarial district but have my
few chills until I went away
to school to a town at the foot
of the mountains where chills
were unknown to the students
after about [illegible] months be
gan to have chills the tertian
variety, and continued to have
them until I left the place
[illegible] in the afternoons and
returned to my home.
Cignoli. This is [illegible]
sy. Febrile paroxysms [illegible]
three of intermittent fever are

[illegible] occur in the afternoon, [illegible] are apt to come on in the evening. If a disease is not relieved by antimalarials, we may infer that it is not intermittent.

<u>Prognosis</u>: Simple intermittent is not dangerous in itself, but should be arrested as soon as possible to prevent its running into the pernicious or inducing cachexia, general disease, and the malarial cachexia. Some have claimed that it exerts a protective influence against

petition it has seemed to appear that it rather provokes the disease. It is thus predisposed to it.

Treatment. We first have to consider the paroxysm and the treatment during intermissions. We should do all we can to relieve the stage in which we find the patient. During the cold stage we may apply warmth to the body by means of warm bottles, warm bathes, by keeping patient well covered up. In the hot stage giving cold water or water and whiskey, keep the

air moderately cool and give
diluents. Curing, sweating, clay
[illegible] applying to the
it, but try to prevent it as
[illegible] as possible. [illegible]
[illegible] treatment consists
bring the [illegible] cons[illegible]
[illegible] in the equal [illegible]
[illegible] [illegible]
[illegible] the occurrence of the fer
[illegible] in the great majori
[illegible] [illegible]
[illegible] the disease as soon as
possible as its morbid effects
[illegible] proportion as it is
quickly arrested. It is always
[illegible] to [illegible] [illegible]

[illegible] a mild
[illegible]
cathartic, then begin giving
[illegible] give quinia in large doses which
[illegible] it is [illegible]
[illegible] or doses at intervals to giving
the whole amount [illegible] at
[illegible] time. Difficulty [illegible] in
giving quinia is [illegible]
met with as where there is
[illegible] intolerance of the drug. Some
are affected very unpleasantly
by it even in small doses.
This intolerance is frequently
[illegible] at [illegible] times

real In such cases we must
[illegible] small doses, and gen-
[illegible] small do-
[illegible] and
if there is still [illegible]
[illegible]
in the [illegible]
ly having been taken, but this
[illegible]
a slight degree. The impedimenta
[illegible]
only when the remedy is not retai-
ned in the stomach. [illegible]
[illegible]
[illegible]
[illegible]
[illegible]

[illegible]

[illegible] chloral, arsenic salacin, en-
[illegible] [illegible] [illegible] the
sulphites, carbonate of ammonia
and tincture of Iodine all seem
to [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible]
to be second best to the salts of
quinia. Eucalyptus has some value
but [illegible] [illegible] [illegible] [illegible]
[illegible] to remember the [illegible] [illegible]
of the organs of [illegible] [illegible]
by the [illegible] [illegible] [illegible] [illegible] It is

[illegible] that [illegible] should
[illegible] [illegible] the [illegible]
it. But [illegible] other [illegible] [illegible]
[illegible] America. Something
[illegible] be done to prevent the [illegible]
[illegible] disease [illegible] be [illegible]
[illegible] thoroughly and [illegible]
[illegible] Persons [illegible] [illegible]
[illegible] in the [illegible]
[illegible] or [illegible] air, should [illegible]
[illegible] the higher [illegible] of [illegible]
and [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible]
[illegible] preparation [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible]

[illegible]

[illegible] D.C.